THE UNIVERSITY of EDINBURGH

Social and Emotional Adjustment of Physically Handicapped Children at Ordinary and Special Schools.

Astrid Mona O'Moore (nee Dahl)

Thesis submitted to the Faculty of Social Sciences, University of Edinburgh, in fulfilment of the requirements for the degree of Doctor of Philosophy.

April 1977

DECLARATION

I declare that this thesis has not been submitted as an exercise at this or any other university, and that it is entirely my own work.

Acknowledgements

In submitting this thesis I wish to express my gratitude to my supervisor Dr. Halla Beloff for her direction, advice and encouragement at all stages of the study.

I should like to acknowledge the help which was given by the staffs of the following institutions: the School Health Service Departments, the local Education Authorities, the Scottish Council for the Care of Spastics, the Royal Hospital for Sick Children, Edinburgh, and the Princess Margaret Rose Hospital, Edinburgh. The staffs of these bodies as well as the schools involved co-operated in providing access to their records and were most encouraging and generous with their time. In particular I must thank the following individuals, Drs Jean Willison, Jim Naughton, Tom Ingram, Margaret Drummond, Elizabeth Duthie, Professor D.C. Simpson and Miss Ann Dodson. I am also most grateful to the parents and children from whom I learned so much and without whose involvement this study could not have been carried out.

My warm thanks go to Mr. Jack Thirwell of St. Mary's Hospital, London, so ably assisted by Dr. Suren Bhatia, of King's Hospital, London, who provided an invaluable introduction to the mysteries of computer data processing. My thanks are also due to Mr. James Murphy of the

Department of Health, Dublin, for the modification of a SPSS programme and Mr. Christopher Nolan and the staff of the Computer Department (Federated Dublin Voluntary Hospitals) for use of computer facilities.

I am very grateful to Mr. Frode Dahl for his skillful presentation of the graphics and appendices.

Dr. Kate MacSorley of the Institute of Child Psychology, London, provided much support and encouragement during the tedious stages of scoring. Among my present colleagues at Trinity College, Dublin, I am especially indebted to Professor D.W. Forrest for helpful advice and criticism and to Mrs. Patricia and Mr. Bernard O'Flaherty for lessening my workload.

Special thanks are due to Miss Mary Fitzgerald for her meticulous typing of the final draft while under severe time pressure.

Finally, a word of warm appreciation to my husband, parents and parents-in-law for their sustaining moral and much practical support during the preparation of the thesis.

ABSTRACT

This thesis forms an exploratory study the purpose of which is to clarify the nature of relationships existing between the social and emotional adjustment of physically handicapped children and the type of school attended. The subjects, 114 children of from nine to eleven years of age, of normal intelligence and with visible physical handicaps affecting movement, were drawn from three types of school: (a) ordinary day, (b) special day, and (c) special residential. A matched sample of 114 normal children attending both ordinary and residential schools formed the control groups. The children were interviewed individually and various psychological tests administered, i.e. verbal and non-verbal, intelligence, school attainment, adjustment and personality characteristics, attitudes to school and child-family relationships. The teachers estimated social adjustments in children while the parents' attitudes to child-rearing and the attitudes of normal children in ordinary schools to the physically handicapped were also examined.

The results obtained show interesting trends. There were no statistically significant differences in the overall social and emotional adjustment of physically handicapped children at the three types of school. Physically handicapped children at ordinary day schools

had higher educational attainments than had children at special schools. Differences were not found between the social and emotional adjustment of physically handicapped children and their controls. However, only the physically handicapped attending ordinary day schools achieved the same educational level as did the controls.

On the basis of these findings, it is concluded that neither integration nor segregation is superior in ensuring the optimal psychological development of physically handicapped children. On the other hand, at the present time and bearing in mind the limitations of this study, the ordinary day school seems to be more successful in promoting the higher level of scholastic achievement. Accordingly, it is suggested that there should be increased integration between the physically handicapped and the normal. The provisions essential for such integration are outlined. It is advised that special schools should be retained in modified form. The modifications necessary to promote optimum personal and educational development are discussed.

CONTENTS

I SUBJECT OF RESEARCH

CHAPTER 1

INTRODUCING ADJUSTMENT

Adjustment is a word frequently used in every day life. It is both a concept in psychological theory and a means of decsribing people. Adjustment is all too commonly perceived as a one-way process, in which the person, rather than the environment, must adjust in order to ensure harmony. For example, we wonder how a child will adjust to his new school, rather than how the new school will adjust to the child. A reason for this distorted view of adjustment is perhaps the one-sided nature of most early psychological investigation. In describing human behaviour there has been a tendency to refer to the attributes of the individual. Relatively little attention has been paid to the environment. For instance, there are many tests of personality but there are few techniques for measuring the environmental dimensions of a situation. A broader concept of adjustment has been proposed by White (1964), who considered that the concept of adjustment implied a constant interaction between a person and the environment, each making demands on the other. Thus how an individual behaves in a situation depends not only on personal characteristics but also on the characteristics of the situation: "Sometimes adjustment is accomplished when the person

yields and accpets conditions which are beyond his power to change. Sometimes it is achieved when the environment yields to the person's constructive activities. In most cases adaptation is a compromise between these two extremes and maladjustment is a failure to achieve a satisfactory compromise" (p.95).

Implicit in this approach is a greater optimism and hopefulness for man's fate and future (Arkoff, 1968). Although environment influences us, we also influence our environment. We not only conform we are conformed to.

In recent years research has directed our attention to the individuality and power of the person. Rather than being a passive recipient of environmental stimulation, the infant from the very beginning is now seen as playing a part in creating his psychological environment. There is a mutual interaction between the environment and the child.

Adjustment is often referred to as if it were a state or static condition. However, with constant change in environment, a continual adjustment (or readjustment) is necessary. A satisfactory adjustment is not achieved once and for all time. It must constantly be achieved and reachieved throughout life.

Psychological stresses, frustration, anxiety and conflict are central to the process of adjustment. The organism adjusts to such challenges by responses such as aggression and the defence mechanisms. In moderation these are helpful modes of adjustment. However, if they

become dominant in problem solving, they imply maladjustment. It must be remembered, however, that the existence and operation of these adjustment mechanisms are unproven hypotheses.

The question has frequently been asked as to the nature of "good adjustment" or of "poor adjustment". Mental health, normality or sanity are terms which share meaning with good adjustment. These concepts are often used interchangeably by both lay and by professional individuals alike. However, each concept has special connotations. Broadly speaking, good adjustment is defined in terms of the person and the environment. In contrast, the other concepts of normality and sanity, being more personal and static, are not so closely linked with the environment. For example, it is unlikely that one would refer to a person as mentally healthy or normal in one area of living but not in another. Similarly, poor adjustment has environmental and dynamic implications while mental illness, neurosis, psychosis and insanity have more personal connotations. They all, however, indicate "undesirable" qualities of conduct.

Identification of "good adjustment" or of "poor adjustment" is made difficult by varying opinions as to which qualities or aspects of behaviour are "desirable". That there is more agreement amongst theorists than is commonly supposed was demonstrated by Arkoff (1968) who identified the most frequently mentioned qualities and classified into four sets those for which

a core of consensus was found. The first set of valued qualities included happiness and harmony. Happiness was defined as an overall sense of well-being. Harmony implied an overall balance between personal and environmental demands. The second set included components of self-regard such as self-insight (a knowledge of oneself), self-identity (a sharp and stable image of oneself), self-acceptance (a positive image of oneself), self-esteem (a pride in oneself) and self-disclosure (a willingness to let oneself be known to others). The third set included personal growth (the realisation of one's potentialities), personal maturity (the realsiation of age-specific goals), and personal integration (the realisation of unity and consistency in behaviour). The last set of qualities included contact with the environment (the ability to see the world as others do), effectiveness in the environment (the ability to relate to others and be productive) and independence of the environment (the ability to be autonomous and not to be bound by group patterns).

The controversy regarding the evaluation of adjustment probably reflects the distinctly varied behavioural standards and personal qualities which are adopted by different cultures and societies. Even within a culture there are divergent ways of looking at the same behaviour. Each individual exercises a unique way of rearing children specifying differently what is encouraged

tolerated or discouraged.

Lazarus (1961) believes that there is no way out of this dilemma of cultural relativism. He states: "the closest we can come to a solution is to focus on the ways in which persons adjust rather than how successfully they do so. If we are to regard individuals as differentially effective in adjustment, we must try to consider success from the point of view of the nature of the modes of adjustment manifested, rather than from the perspective of social norms or values. We must make an effort to be independent of our cultural traditions and take a cross-cultural frame of reference. So far as possible, we must consider adjustment as process". (p.15).

In an effort to define what makes for effective adjustment, attention must be focused on the determinants of personality. Personality and adjustment are "inextricably intertwined" (Lazarus, 1961). "Not only does adjustment depend on personality, at least the biological and social conditions that shape personality, but personality itself consists in part of the stable ways individuals adjust in different situations and at different times". (Lazarus, 1961, p.53).

It is customary to regard the early years of development as producing the most permanent changes in personality growth and adjustment. Personality development is mainly influenced by those people considered most important to the child - i.e. by those whose administration of rewards and punishments are most

significant to him. Such individuals are often referred to as the "significant others". Among the "significant others" are the family. In all societies, the nuclear family is the initial matrix within which personality is rooted and nourished. It ensures continuity of child care and the primacy of certain relationships above all others. The nuclear family of husband, wife and children is "always part of a Kinship system, which, in turn, is an element of the larger social structures and culture. The family orients the child first to his kin and then to community and society". (Clausen, 1966, p.1). Clausen is also of the opinion that the child's ultimate effectiveness as a member of the larger society may ultimately be the best test of the family's success as a socialisation agent.

It appears from research work (Coopersmith, 1967; Sears, 1970) that children who experience a warm and affectional relationship with their parents and who are accepted by their parents, are the most accepting of themselves. Early and continued parental acceptance enables the child in turn to be accepting of others. The overwhelming evidence (Whylie, 1961) suggested that self-acceptance is related to adjustment, a high regard for the self generally implying a high level of adjustment.

When the child enters school the teacher also becomes a "significant other" and adds to the child's

self-evaluation process. The teacher stimulates and guides the intellectual development of the pupils, affects their attitudes and values and exerts a marked influence on their emotional adjustment through the kind of psychological atmosphere established in the classroom and through differential rewards and punishments.

The peer group also plāy an important role in the development and adjustment of the child. Peers have a normalising or levelling effect in that they often counteract parental pressures, especially if the parents' behaviour and attitudes are deviant. They allow the child an opportunity for identification. Peer society "conveys to its members a large body of information and values. It provides a wide opportunity for the learning and playing of social roles. It makes available to the child a reality check from which he can judge his own behaviour more accurately". (Johnson and Medinnus, 1974, p.355).

The presence of a physical handicap can pose special problems for a child. As a child develops he must at some stage become aware that he is different from others. Deviation from normality, especially if it restricts and curtails the child's active participation with his peers, may have a significant effect on the personality development of the child. Lack of social involvement and experience can, for example, lead to an

impoverishment of the child's category usages pertaining to interpersonal relations (Richardson *et al.*, 1964).

It is frequently stressed that a child's feeling about himself and his handicap is a much more potent factor in determining his emotional and social adjustment than the nature and degree of handicap (Kellmer Pringle and Fiddes, 1970). Parental acceptance or rejection is likely to influence the child's attitude toward himself. If he is treated patiently with warmth and concern his self-worth is likely to be enhanced. If he is treated brusquely with little sensitivity his self-esteem is likely to be diminished.

Similarly, as with non-handicapped children, peer acceptance is an important element in self-acceptance, although it is not always clear which influences which. It is possible that the child's lower self-acceptance may generate hostility and resentment which reduces acceptance by his peers. A child constantly reminded of his handicap, and thus allowed no opportunity to feel that he is accepted, is likely to be under stress and to become resentful and discouraged.

Going to school is likely to be a particularly significant moment for a disabled child. Exposure to an ordinary or special school can be expected to provide the child with a very different experience. For example, a child entering a special school for the first time is likely to be assured that there are other children who

have similar problems as he has and that he is not unique. On the other hand, a disabled child entering an ordinary school will realise that he differs from the group. The impact of this experience will undoubtedly depend on the degree to which he was protected by his family from knowing that he was handicapped. As with non-handicapped children, the type of psychological atmosphere created by the school and its teachers is likely to have a widespread and lasting effect on the child's development.

It should be remembered that a growing child's family, his peers and his school are not the only influences which he encounters. The community, exposure to religious instruction and the mass media also make differing impressions on children and help to mould personality and behaviour. It should be emphasised that social forces including the peers and the school are secondary in importance to the family. If parents are neglectful or rejecting, the influence of the social forces outside the home become increasingly important, the degree of importance being determined by both the personality of the child and the behaviour of the parents (Reckless *et al.*, 1956; Scarpitti *et al.*, 1960). The various forces will interact with one another within the setting of the culture. Sometimes they conflict with each other, sometimes they reinforce each other. At times they will dispose the child towards adaptive

behaviour, at other times toward maladaptive behaviour.

It is the influence of school experience which forms the major focus of attention in the present thesis with particular reference being made to the social and emotional adjustment of physically handicapped children. The family and its effect on the PH child has been well researched whereas the other social forces mentioned above have been subject to less sympathetic study. It is considered that apart from the family, the school plays a more vital role than the other social forces in ensuring the optimal psychological development of the child in his formative years. The school like the family inculcates the child into the mystique of society. "The school contains in miniature all the stresses and strains of the culture outside, and it is in the crucible of the educational system that the child will be tested for competence in the society at large. Entry to school is entry into the culture. In the social and psychological development of the child no experience is more crucial to the form and the shape of his adult life". (McNeil, 1966, p.42).

CHAPTER 2

OUTLINE OF THE PROBLEM

"The argument is often heard, that handicapped children in ordinary schools may, on account of their physical appearance, impairment of mobility or intellectual retardation be subjected to ridicule from their peers, or be so aware of the areas, such as sport, in which they cannot participate, that their social adaptation and self confidence is diminished, whereas their social and emotional adjustment would be fostered by the more sympathetic atmosphere of the special school. Only subjective answers, differing from one person's experience to another can be given to this question until more research has been done." (Haskell and Anderson, 1969, p.47).

The work reported here is an attempt to provide more objective evidence about the social and emotional adjustment of physically handicapped children of normal intelligence in ordinary and special schools. The topic was selected in the hope that it might clarify the nature of the relationships which might exist between the adjustment of the physically handicapped child and the type of school attended.

Since its introduction at the end of the 19th century the education of physically handicapped children has been largely through the provision of special schools. In the last two decades there has been a tendency to

provide places, and sometimes special units, for physically handicapped children in ordinary schools. At present the official policy in the United Kingdom is that no handicapped pupil who can be satisfactorily educated in an ordinary school should be sent to a special school (Ministry of Education No. 276, 1954). The extent to which this policy has been implemented, however, varies considerably between local education authorities. Some local authorities are adventurous in their desegregation experiments. Others continue to build new special schools in areas where they already exist.

The reasons for these divergencies in policy are many and complex. (Report of the Snowdon Working Party, 1976). However, it is the writer's belief that the lack of empirical data on the education of physically handicapped children must be contributing to the absurd situation where one local education authority adheres to a policy of total educational integration while the neighbouring authority encourages the provision of special schools.

Many forms of educational establishment exist for the physically handicapped (PH) child. It has been pointed out (Younghusband et al. 1970) that there are at least thirteen different ways of providing for handicapped children:-

1) full-time residential special schools.
2) hospital schools.
3) residential special school provision on a five-day week basis.

4) residential special schools which serve as a base from which pupils attend appropriate ordinary day schools in the neighbourhood, either part-time or full-time.
5) residential hostels providing tutorial help for pupils attending ordinary school full-time.
6) multi-purpose hostels providing the facilities suggested in paragraph 5 but for a variety of handicapped pupils, and also providing short term facilities for children in care, holiday facilities for handicapped children, and relief in family crisis.
7) day special schools
8) day special schools allowing some pupils to attend neighbouring ordinary schools.
9) special classes in ordinary schools, and special units attached to ordinary schools.
10) peripatetic teaching.
11) resource centres in ordinary schools.
12) full integration in ordinary schools.
13) home-teaching.

Many conflicting opinions have been expressed as to the benefits and limitations of these different approaches Educationalists favouring special schools tend to emphasize the following factors:-

1) small classes.
2) more individual attention.
3) teachers specially trained and interested in the handicapped.
4) better educational and therapeutic services.

5) the freedom from the strain of competing with normal peers.

6) the relief from always feeling different and of being an object of wonder and curiosity.

Educationalists in favour of ordinary school placement for the physically handicapped argue that:-

1) special schooling separates children from their peers. They therefore lack the stimulation of varied interests and social learning from mixing with others.

2) lengthy travelling away from their own neighbourhood to the special school often reduces the opportunities of making friends locally.

3) the handicapped child will at some stage have to come to terms with the other non-handicapped world. It is better, therefore that the necessary adjustments take place at an early rather than a late stage in the child's development.

4) the presence of handicapped children in the ordinary schools will familiarize the normal children with physical handicap in a more natural manner.

5) specail schools may become divorced from the main stream of educational thinking. There is a danger that standards will slip. Classes may contain a wide ability and age range.

6) teachers may accept too easily that the handicaps of the children are such as to prevent them from making adequate educational progress.

7) parents seem to prefer ordinary schools.

Special residential education is also a source of controversy. Among the advantages is the intensive approach to a child's need through the creation of an environment and school community which is educative and therapeutic and without interruption or discontinuity (Gulliford, 1971). The disadvantages are that in some cases the child is being educated out of the context of his home and neighbourhood. Also there is a danger that the special boarding school may be remote from normal life so that the social understanding and competence skills required by children are not acquired and exercised.

Those seeking total integration for the physically handicapped child have had much recent support from results emanating from Scandinavia. The findings have been summarized by Anderson (1971).

The results of successful integration in the U.K. have also been provided by Anderson (1973a). She outlines the factors in the children and in the schools which foster successful integration. Practical information is also given about the type of arrangement which should be made for PH children in ordinary schools. Anderson's study is limited to a comparison between PH children and their normal peers.

Comparative studies are required to assess the relative merits of the integration and/or segregation of PH children in different educational settings. To date in Great Britain very little empirical evidence is available

on this subject. Cave (1971) pointed out that this is undoubtedly due to the impossibility of "making a comparative assessment of the same child in different settings, and as handicapped children are perhaps more unequal than most, control groups are difficult, to say nothing of the infinite number of variables". Until an attempt is made, however, to fill this gap in our knowledge it is probable that the present emphasis on special schools will be maintained or as Anderson (1971) mentioned, a variety of ad hoc provisions will be made here and there in ordinary schools often on an unplanned and half-hearted basis.

Tizard (1972) suggested four issues central to the planning and the evaluation of systems of special education. There are:-

1) the epidemiology of handicapping conditions.
2) the need to evaluate the quality of services.
3) the place of model services or demonstration projects in stimulating change.
4) large-scale experimental and evaluative trials.

In the United Kingdom research has been largely in the epidemiology of physical handicap. Findings of some of the major studies have been reported by Anderson and Haskell (1973). The work reported here, however, is concerned with further investigation of Tizard's factors 2 and 4. The emphasis is on the social and emotional adjustment of the children. The reason for this is that such adjustment is central to the success of any educational system. The aims in the education of handicapped children are

essentially the same as those for normal children: "to help the child become a more balanced, mature and efficient member of the group in which he lives with the balance of personality factors which will help him enjoy a satisfying purposeful and positive life (N.U.T. 1964)".

If physical handicaps are liable to impede social and emotional adjustment as well as educational progress, "it is necessary to pay particular attention to creating the best conditions for personal and social competence both through the learning experiences provided in school and by considering other influential factors of school organisation and home school co-operation" (Younghusband et al., 1970 p.199). Earlier mention was made of the fact that a normal child's adjustment is influenced by and determined by a multiplicity of interacting factors. It is accordingly very difficult to isolate the effects of any particular one of them. With a physically handicapped child additional factors such as the nature and degree of impairment and attitudes to disability may also be operating.

In spite of the problems it seems worthwhile to attempt an assessment of the effects which the school environment exerts on the child's development. Few will deny that school plays a central part in mental health. It is a force that can create and aggravate problems. It can also ameliorate or solve them. (Chazan, 1962; Moore, 1966; Mitchell and Shepherd,1966).

Autobiographies of handicapped people have illustrated the influence of school experiences on their development. On entering school at the age of eight and a

half years Raymond Goldman (1947) first learned that "...legs should be stout and shapely and that mine were skinny and deformed. I knew that I should walk and could not. I learned indeed that I was a cripple, a pariah among the strong and straight, an object of pity to grown-ups and of scorn to children" (p.39).

If the development of emotional and social maturity is generally accepted as an important goal in education for both normal and handicapped children, it is then valid to ask whether all types of schools are equally successful or unsuccessful in achieving this goal.

In the investigation reported here three types of school were selected for comparison: the ordinary day school, the special day school and the special residential school. These schools with occasional modifications represent the major different sources of schooling for the handicapped child. They are also those most quoted in any discussion on the integration-segregation issue.

The categories of handicap requiring special treatment are as follows (H.M.S.O. 45, 1945):

a) Blind
b) Partially sighted
c) Deaf
d) Partially hearing
e) Educationally subnormal
f) Epileptic
g) Maladjusted
h) Physically handicapped

i) Speech defect

j) Delicate.

The children in the present investigation were all of normal intelligence and had visible physical handicaps affecting movement. The handicapping conditions comprised: cerebral palsy, spina bifida, thalidomide deformities, muscular dystrophy and congenital abnormalities.

REVIEW OF THE LITERATURE

The review of the literature on physical handicap is arranged in four parts: social, emotional adjustment; attitudes to disability; family attitudes and family relationships; and educational attainment. As already indicated the assessment of social and emotional adjustment forms the major part of the present study. The other three topics to be reviewed were selected because of widely held opinions that they are major determinants in the social and emotional development of children.

I Social and Emotional Adjustment

Effect of type of handicap

Considerable literature is available on the social and emotional development of the physically handicapped. The predominant issue is the extent, if any, to which emotional disorder among the physically handicapped varies from that of the non-handicapped. Systematic empirical research on this subject has been limited. There are many descriptive accounts, including biographies and autobiographies of which Wright (1960) provides a full bibliography. Kellmer Pringle (1964) has also presented a critical review of research published between 1928 and 1962. She concludes, "While most comparative studies show the handicapped child to be less mature and more disturbed than those without any disability, the consensus of opinion and weight of evidence at present at any rate seems fairly heavily balanced against

the view that the handicapped are inevitably maladjusted" (p.10). Pilling (1972) in a comprehensive follow-up review of studies undertaken between 1958 and 1972 concludes 'there is nothing in more recent research to substantially alter Kellmer Pringle's view'.

Many of the most important studies on the psychological consequences of physical handicaps were carried out in the 1940s and 1950s. Barker et al. (1953) draw attention to investigations which indicate that where the disabled physique has a seriously limiting, and depriving effect, whether physically, socially or both, behaviour and personality tend to be seriously affected. However, in all cases physique was only one factor in an extensive context of environmental and personal conditions acting together.

More recently the importance of the differential diagnosis of physical handicap and its relationship to adjustment and academic attainment has been emphasized. For example, distinction is now made between physically handicapped children with and without neurological impairment. In the Isle of Wight study, Rutter et al., (1970b) found a much higher rate of psychiatric disorder (47.9 per cent) among school children with brain lesions[1] than among either non-handicapped children (6.6 per cent) or physically handicapped children without brain dysfunction (11.6 per cent). Anderson (1973a) in an investigation of the integration of physically handicapped children in primary schools found

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1 Mainly those suffering from cerebral palsy (58.3% in those with fits and 37.5% in those without fits).

that the neurologically abnormal children in such schools were more at risk emotionally and socially than those with purely physical disorders. The rate of psychiatric disorder among the neurologically handicapped children was lower (25.0 per cent) than that in the Isle of Wight study. Commenting on the discrepancy in the rate of psychiatric disorder between the two studies, Pilling (1973a) suggested that the childrens' attendance at ordinary schools probably meant that selective factors were present in Anderson's sample. The children were certainly of higher intelligence than those in the Isle of Wight sample and low intelligence is known to be associated with a higher rate of psychiatric problems (Rutter, Graham & Yule, 1970). Although children with cerebral palsy have a higher rate of psychiatric disorder than have normal children, there is little evidence to suggest that such disorder is of a specific type(Neilson 1966). Rutter, Graham and Yule (1970) also found that the majority of PH children with brain lesions (excluding those with severe intellectual retardation) had the same neurotic or anti-social behaviour as children with psychiatric disorders in the general population. They also observed that certain behaviour patterns (e.g., restlessness, fidgeting, poor concentration or irritability) previously associated specifically with brain damage were in fact no more common in the neurologically impaired children than in the groups of non-handicapped children with neurotic or anti-social disorders.

Many reasons have been proposed to explain the higher rate of psychiatric disorder among children with

cerebral palsy. Rutter et al. (1970b) point out that many variables are associated with psychiatric disorder in children with neuro-epileptic conditions. This makes it clear that psychiatric disorder can only rarely be viewed as a direct outcome of the brain abnormality. However, the associations with particular neurological features suggest that brain abnormalities play an important, although not exclusive, role in the development of the emotional and behavioural difficulties! Rutter and co-workers found that psychiatric disorder was significantly more common when there was evidence of a bilateral brain disorder than when the disorder was unilateral. This suggested that the extent of the brain lesion is an important factor in the development of psychiatric disorder. Stabismus, language retardation, intellectual and reading retardation, 'broken homes' and emotional disturbance in the mothers were also significantly related to the presence of psychiatric disorder in neuro-epileptic children. These latter factors, however, were also operative in children who did not have organic brain conditions. Rutter et al. (1970b) are of the opinion that organic brain dysfunction probably renders the child more susceptible to those stresses which are experienced by any normal child.

Spina Bifida

There are very few studies concerned with the emotional and social adjustment of children with spina bifida. It is not yet possible to say whether there is a greater extent of emotional disorder among spina bifida

children than among non-handicapped children (Pilling, 1973b). Meijer (1971) gives an account of the emotional problems of spina bifida children in hospital. It is not clear, however, if the problems described are due to the effects of hospital admission or to the physical condition itself. A study by Laurence and Tew (1971) suggests that there is a slightly higher incidence of emotional problems among children with spina bifida than among the non-handicapped. Emotional problems in spina bifida children have been found to vary with the type of lesion and with the presence or absence of hydrocephalus. Findings on the Bristol Social Adjustment Guide for 58 children with spina bifida from South Wales, aged 5 to 12 years (Laurence & Tew 1971) suggest that the children with myelocele (the commonest form) had slightly better emotional adjustment on average than those with meningocele (the mildest form of spina bifida). Those with hydrocephalus were significantly more maladjusted. The children suffering from incontinence (a common feature of spina bifida) did not differ significantly in maladjustment from those who were continent. Sex differences in the psychological effect of being incontinent has been noted by Fulthorpe (1974). The results showed that the girls who had been fitted with urinary appliances were significantly better adjusted than incontinent girls. The reverse was true for the boys. The reasons for this observed trend are not apparent. Fulthorpe suggests that "when a boy with a urinary appliance focuses on his body he realises that he is even more disfigured than his incontinent

peers. Such observations by the boy may well provoke feelings of being different and may result in the child displaying inhibited forms of social behaviour so as not to draw attention to his added unnatural handicap". (p.18).

The severity of both the physical handicap and of the intelligence were both factors affecting the adjustment of children with myelomeningocele (Kolin et al., 1971). Parental adaptation (assessed by their understanding of the child's defect, their role in the child's development, marital status and of mental status) was, however, an even stronger determinant of the children's adjustment.

Fulthorpe (1974) discovered in his sample of children with myelomeningocele that the boys over 11 years were found to be significantly more "under-reacting" than those under eleven. Depression was the predominant factor contributing to the difference. Neustatter (1972) supports the theory that the psychological problems of spina bifida may increase with age.

Muscular dystrophy

Schoelly and Fraser (1955) found that there were no distinct psychopathologic entities exclusive to dystrophic children and that severe emotional illnesses were no more common than in the normal population. They did, however, find a high frequency of minor or moderate psychopathologic disturbances, often of a neurotic character. Other studies of emotional adjustment in dystrophic children have revealed a wide divergence of

opinion. The findings ranged from those suggesting emotionally well adjusted children to those indicating marked immaturity and severe psychopathologic conditions (Green 1952; Morrow and Cohen, 1954; Truitt, 1954). Sherwin and McCully (1961) summarized their findings on the emotional adjustment of boys aged 10-14 with muscular dystrophy:- "There was a relative absence of serious emotional illness, relative absence of overt anxiety or depression, absence of predominant modes of behaviour and attitudes in favour of "seasaw" responses, relatively retarded development of conscious controls over behaviour especially in the area of inter-personal and group activities, excessive reliance on fantasy, life as a source of satisfaction and as an outlet for tensions, along with free and markedly fluid nature of these fantasies including motor and agressive activities" (p.64). The authors are very careful to point out, however, the absence of any specific type of emotional disorder which might be characteristic of dystrophic children.

Thalidomide - handicap

The physically handicapped victims resulting from maternal ingestion of thalidomide do not appear to be predisposed to maladjustment (Gringas et al., 1964). Kellmer Pringle and Fiddes (1970) found that although many of the 'thalidomide children' in their study had severe physical and sensory disabilities, emotional maladjustment was no more prevalent among them than among the non-handicapped. However, contrary to the national

sample (National Child Development Study, 1958, Cohort), there were more maladjusted thalidomide girls than boys (Kellmer Pringle et al., 1966). The symptoms most frequently reported (The Bristol Social Adjustment Guide) for the thalidomide sample were 'anxiety or uncertainty about adult interest and affection'.

In summary there appears to be no association between a particular handicapping condition and a specific emotional or social disorder. Where behavioural disturbances are found, the aetiology seems to be similar to that of non-handicapped children. The child with organic brain dysfunction is particularly characterized by a greater susceptibility to social and emotional problems.

Effect of type of school attended

As previously stated very little evidence is available on the comparative assessment of the alternative forms of education currently available for physically handicapped children in the United Kingdom.

Bowley (1967a) studied children with cerebral palsy attending ordinary schools. She concluded that the children were making 'a really satisfactory adjustment', This was particularly true of the hemiplegic child with above average intelligence, good verbal ability and with no marked perceptual problems or additional handicaps of vision or hearing or epilepsy. Because of the small sample size and its being unrepresentative of the childrens' intellectual ability (many had IQ's above 90), she emphasized that her conclusions should be regarded

as tentative.

Marlow et al. (1968) assessed the progress of ten children with cerebral palsy who had gone from the nursery unit of a special school into a number of ordinary schools. Despite the absence of physiotherapy the physical progress made by the children was generally satisfactory. Educational progress was disappointing in five of the children. The emotional and social adjustment of four children was estimated to be satisfactory and that of another child to be moderately satisfactory. The five other children presented 'a sadder picture'. Four of them were not satisfactory in their emotional and social adjustment and the other, while satisfactory in his emotional adjustment, was not satisfactory in his social adjustment. Three of these children were classed as 'misfits'. The adverse factors in the ordinary schools were believed to be large classes with little individual teaching, frequent changes of staff and staff shortages. The physically handicapped children were inevitably slower, because of their perceptual and physical difficulties. This led to failure in competitive work in written examinations. Marlow and her co-workers also believed that more information regarding a child's specific physical and educational difficulties should be made available to the teacher. Thus, as is accepted in Scandinavia, careful, though not necessarily complex, preparatory structuring of the ordinary school environment is necessary before handicapped children are accepted there. (Dahl, 1975).

The most comprehensive study to-date of the integration of physically handicapped children in ordinary primary schools is that by Anderson (1973a). A variety of measures were used to look at the educational and social adjustment of 74 physically handicapped children in junior schools or classes and 25 P.H. children in infant schools or classes. Ninety one schools participated. In all cases headteacher, classteacher and parents were interviewed. The techniques used to investigate the extent and nature of behaviour disorders in the sample were the Rutter-Graham scales. The parent scale showed few differences in the rate of disorders among the controls (11.5 per cent) and the handicapped group (11.9 per cent). When the physically handicapped group was subdivided the children with neurological abnormalities showed a higher rate of disorders (16.7 per cent) than did those without (9.0 per cent). The teacher scale also showed a higher rate of deviant behaviour (25.0 per cent) in the neurologically abnormal group than among the other handicapped children (9.0 per cent). There was no evidence of any association between the severity or visibility of the handicap, or of the actual functions impaired, and the presence of a behaviour disorder.

When individual items of behaviour were considered, the most striking finding was the short concentration span which teachers reported in 88 per cent of the neurologically handicapped juniors but in only 43 per cent of the physically handicapped children and 35

per cent of the controls. In the infant group as a whole, 76 per cent of the P.H. children had poor concentration compared with 23 per cent of the non-handicapped.

There was no significant difference in overall social adjustment between the handicapped and the control groups. Some 72 per cent of the controls and 66.6 per cent of the P.H. children (without neurological abnormalities) were 'well-adjusted'. Only 30 per cent of the neurologically handicapped children, however, fell into the well-adjusted group.

Factors which were unrelated to overall social adjustment in Anderson's study included the age of the child, the severity of the handicap and the presence of a purely physical disorder per se. Factors which did influence social adjustment were intelligence level and also the presence of a neurological abnormality. The less well adjusted children in both the handicapped and control groups tended to be from large families and from social class (4) and (5). Among the handicapped children the less well-adjusted children were often attending schools in London rather than urban schools outside London.

Anderson's findings suggest that most physically handicapped children without neurological disorders are able to cope, socially and emotionally with the environment of an ordinary primary school.

A follow-up study of Anderson's sample of children would be very worthwhile because recently Welbourn (1975) has shown that younger children who are

affected with spina bifida cope better in an ordinary primary school than those similarly affected who are in ordinary secondary schools. A possible explanation of these findings is the occurrence of adolescence which is likely to bring additional emotional problems for the physically handicapped child. Shakespeare (1975) speaking of adolescents with cerebral palsy stated "at this stage, they become more aware of peer reaction, of activities they cannot take part in like dancing or athletics, of feelings of being unattractive, of the realities of the work situation, and in some cases they need to give up a fantasy that they will be cured by the time they are grown up" (p.83). These factors are probably characteristic of all physically handicapped children.

Vocational success has been taken as a criterion for favouring integration of handicapped children in ordinary schools. Cutsforth (1962), Robertson (1963) and Ingram (1965) have all suggested that handicapped children who attend ordinary schools have a better chance of achieving occupational success than have similarly handicapped children who attend special schools. Uncontrolled variables may be responsible for such a trend. For example, a special school may be stigmatized in the eye of a prospective employer.

Little published material is available concerning the physically handicapped in residential accommodation.

The dangers of institutionalisation to the healthy development of the personality has been emphasized by many authors, but the evidence is controversial (Ainsworth,

1962; Yarrow, 1964; Rutter, 1972). Some studies have pointed to emotional and cognitive deficits which follow institutional care; other studies have failed to confirm any adverse effects. The effect which residential placement will have is in some measure dependent on the child's previous history.

Placement of children in special boarding schools is usually justified on (i) medical grounds (i.e., that the disease or disability was too severe for home management), (ii) educational grounds (that the severity of the child's handicap would seriously impinge on educational opportunities in an ordinary school) or (iii) social grounds (acute family problems, when parental anxiety and tension are proving harmful to the child or when the rest of the family is in need of respite from the strain of caring for a very disabled child). Pless, Rackham and Kellock (1967) showed that it was the psychosocial rather than the physical factor which was the major determinant in the placement decision for residential institutions.

In a study involving spina bifida children, Weininger, Rothenberg and Henry (1972) indicated that the instutionalised handicapped children had a more distorted body image than had either a similarly handicapped group attending day school or a normal group of children. The authors believed that a lack of consistency in parental figures and limited living experiences were important causative factors in the underdevelopment of the body image. Gruhn and Krause (1968) concluded that handicapped children

attending residential school showed some evidence of emotional disturbance. On the other hand, handicapped children in ordinary schools did not differ from their normal peers on a personality rating scale or on their teachers' assessment of personality. The physically handicapped children at residential school were, however, more severely handicapped than those at ordinary school.

Oswin (1967, 1971) described behaviour problems in children with cerebral palsy who were hospitalized for lengthy periods due to unsuitable or non-existent homes. There are numerous illustrative case histories but little quantifiable information.

Kellmer Pringle and Fiddes (1970) found that all of five thalidomide children who were living in an institution were emotionally disturbed. However, each of these children had also an adverse family background.

It is also possible that differing types of institutional care may have accounted in part for controversial findings in the earlier work. King, Raynes & Tizard (1971) have given a critical appraisal of different types of institutional care.

In summary, the investigations considered illustrate the lack of available data on the relative effectiveness of alternative forms of education for the physically handicapped child. There are as yet no clear-cut guidelines. The possibility of making valid comparisons is restricted by the fact that each group of investigators has used different research designs and tests and has studied children with a wide range of ages and handicaps.

The present study should overcome some of these weaknesses and allow more meaningful comparisons to be made.

II. Attitudes to Disability

The attitudes that others have towards a handicapped child is a most important factor in the child's social and emotional adjustment. For example, Pilling (1972) states that if children with orthopaedic handicaps are viewed unfavourably, this may be a more important factor in their development than the actual physical limitations. Wright (1960) is of the opinion that one of man's basic strivings is "for acceptance by the group, for being important in the lives of others, and for having others count positively in his life. As long as physical disability is linked with shame and inferiority, realistic acceptance of one's position and one's self is precluded" (p.14).

One of the most common parental reasons for sending a physically handicapped child to an ordinary school is to allow mixing with normal children (Anderson, 1973a; Woodburn, 1975). Many studies of physically handicapped children suggest that they are disadvantaged in developing social relationships with their peers. The evidence supporting this generalization comes from experimental studies of interpersonal relations, sociometric investigations and personal reports from disabled persons. Kleck, Hastorf and Oni (1966) showed that the behaviour of a non-handicapped person differs when meeting a handicapped person for the first time than when first meeting a non-handicapped person. These behavioural differences (shorter

interaction time, less variety of topics discussed, distortion of opinion) limit the interpersonal feedback and experience of the handicapped person when in the company of one who is non-handicapped.

There are numerous investigations to support the hypothesis that negative attitudes exist towards people with various disabilities. Wright (1960) from her search of the literature concludes, however, that attitudes expressed towards persons with physical disabilities for the most part are not unfavourable, are frequently mildly positive, and may even indicate respect. McDaniel (1969) in his review of studies measuring attitudes toward the disabled, concluded that there was no universal stereotype of the physically handicapped and that the degree of acceptance or positive attitudes towards the disabled varied with sex, age and maturity and possibly also with level of education and 'sophistication'. Most of the studies cited were based on work with adult or college and high-school populations; there have been few investigations reported of children's attitudes towards the disabled. Jones and Sisk (1967) found that four years was the age at which a child began to perceive limitations imposed by physical disability.

Several investigations on the social status of handicapped children, usually carried out in a normal class with a single handicapped child, have shown that the handicapped child is less preferred as a friend, (Force, 1956; Centers & Centers, 1963; Billings, 1963; Marlow et al., 1968; Anderson, 1973a). An exception was provided by Soldwedel

and Terrell(1957) which demonstrated that for seventh and eight grade school classes containing a subgroup of handicapped pupils, there was no significant difference in the number of friendship choices obtained between handicapped and non-handicapped children.

Richardson et al. (1961) have investigated the attitudes of normal children to other children who were affected with various visible orthopaedic and cosmetic disabilities. They reported a consistent preferential order when children were asked to rank pictures of children with different handicaps. The order of decreasing popularity was (a) the child with no physical handicap, (b) a child with crutches and a brace on the left leg; (c) the child in a wheelchair with a blanket covering both legs; (d) a child with the left hand missing; (e) a child with facial disfigurement on the left side of the mouth; (f) an obese child. Of particular interest was the fact that physically handicapped children also ranked the pictures in the same order. The authors have claimed a cultural uniformity in the ranking of the above six pictures. However, this claim has been challenged by Alessi and Anthony (1969) who find it "at best premature and at worst incorrect".

The preferential hierarchy found in the study of Richardson et al. (1961) suggest that popularity does not correlate with severity of disability. They stress the primary importance of the face in an initial assessment of another person. Luria, cited in Richardson et al. (1961), lends support to this interpretation. Eye movements were

recorded in scanning a picture of a person. The results showed that the eyes focused on the face initially and returned to the face often during the scrutiny. This might account for the rank order obtained by Richardson et al. with the exception that the least preferred child was obese rather than facially disfigured. The authors point out, however, that obesity affects facial appearance to some degree. Goodman et al. (1963) in a simalar study found that the obese child was given a higher ranking by children from low income Jewish families. Apparently the well-fed stockily built Jewish child is often viewed by other Jews as one who is both healthy and loved. On this basis Goodman et al. (1963) suggest that children acquire the values which determine their choice during the early socailization process.

Richardson and Royce (1968) observed racial characteristics to physical handicap. They found that for all subjects 'physical handicap' was so powerful in establishing preference that it largely masked preferences based on skin colour.

The conclusion which Richardson and his co-workers draw is that the values or attitudes that children in general hold towards the disabled make them less inclined to initiate social relations with a handicapped child. When a discussion was held with the children prior to revealing the results of the ranking, Richardson et al. (1961) found that the children were uniformly of the opinion that they had not judged the drawings on the basis of physical

appearance and that children with handicaps were just as nice as children without handicaps. When confronted with the discrepancies between their rankings and reasons which they had given for these, some of the children gave revealing answers. One said, "he did not feel comfortable with a handicapped child". This indicates that a conflict might exist between what a child thinks is correct to feel and his or her actual choice. Jones and Sigall (1971) have shown in their 'bogus pipeline' experiments that conflicts such as this do arise in adults.

Richardson (1971b) suggests that a normal child who might initiate contact with a handicapped child is "more isolated, has less general social experience and has learned the values of his peers less accurately" (p.1055). Anderson (1973a)found that this was not necessarily the case with children who have grown up at school together. Of the 20 (27%) physically handicapped children whose choice of best friend was fully reciprocated by a non-handicapped classmate in a sociometric test, 18 had normal friends who were of average or above-average popularity. The severity of handicap was not a barrier to social acceptability.

The role which body image variables play in the normal person's response to the disabled has been investigated by Epstein and Shontz (1962). They found a relationship between low body satisfaction and avoidance or rejection of the physically disabled person and a high body satisfaction and approach or acceptance of the disabled person. Fisher (1970), however, in his review of studies

examining body image and attitudes toward the disabled concludes, " one is not impressed with the consistency or magnitude of the relationships found. It has not been easy to show that body image variables predict an individual's perceptions of the disabled" (p.77).

A further determinant in the attitudes to the disabled is the type of handicap. Force (1956) and Anderson (1973a) using sociometric techniques found that children with cerebral palsy were more rejected than children with other forms of handicap. This in agreement with the findings of Jones et al. (1966), Shears and Jensema, (1969) and Tringo (1970). These authors used varied samples of high school and college students and of adults. Using a social distance technique the subjects were asked as to the closest relationship they would allow in a person with a particular type of disability. Findings were unanimous that those with cerebral palsy are seen by the non-handicapped (as a friend, co-worker, playmate for child or marriage partner) less favourably than those with sensory handicaps or physical handicaps without brain involvement. Shears and Tensema (1969) suggest six dimensions which probably combine and interact in a composite structure of our stereotypes of handicapped persons:- 1) visibility of the affliction; 2) interference in communication process; 3) social stigma associated with disability; 4) reversability prognosis; 5) extent of incapacity; 6) difficulties which anomaly imposes on daily living routine. The last three dimensions seemed to be more important at closer levels of intimacy (i.e. would marry, would have as a friend

would work with).

There is some evidence which provides a basis for the logical separation of general attitudes toward physical impairment and disability on the one hand and toward the actual disabled person on the other. Disabling conditions are seen as more undesirable than are the persons who may display them (Combs and Harper, 1967; Jaffe, 1967, 1968). Jaffe (1967) pointed out that a major problem in research on attitudes toward the disabled is the type of stimulus used to elicit expressions of attitudes. Investigators have used a variety of stimulus material to represent persons with disabilities. Some of these have been photographs, written discriptions of persons, actual persons, and labels or terms such as "cripple" and "disabled person". Each stimulus has its limitations. The photograph, for example, captures a person in a simple pose. A description is composed of words. The "stimulus person" may be introduced in an unnatural situation, or there may be certain uncontrolled features of the "stimulus person" unrelated to the disability variable being studied, to which subjects may be responding. Jaffe (1967) compared the responses of high school students to three 'labels' (amputees, mentally retarded, former mental patients) with the responses of other students to written sketches of persons described as having one of these disabilities. For all three disabilities he found attitudes to be more favourable to the sketch person. It appears that when the disabled were seen to function adequately attitudes to them were favourable. Interestingly, Rickard et al. (1963) found that competent disabled people were preferred as potential

employees to less competent applicants with no disability.

First hand experience and contact with the handicapped have been found to lead to more favourable attitudes to disabled persons (Haring et al., 1958; Roeher, 1961; Yuker et al., 1960; Semmel and Dickson 1966; Rapier et al., 1972). Goffman (1963) believes that exposure can, of itself, lead to a marked increase in the acceptance of different handicaps by the public. He notes, for example, that 'the service shops which are sometimes found in the immediate neighbourhood of mental hospitals may become places with a high tolerance for psychotic behaviour; the neighbourhoods around some hospitals develop a capacity for calm treatment of the facially disfigured who are undergoing skin grafting'. Richardson et al. (1961, 1974) found, on the other hand, that normal children attending summer camps with handicapped children did not differ in their attitudes to handicap from children who had not been exposed to disabled children in this way. Chigier and Chigier (1970) refer to research work which suggests that the nature of the initial exposure to the physical handicap (that is, whether this is pleasant or otherwise) is more significant than the amount of exposure or the provision of verbal information. If this is correct then, as Anderson (1973a) remarked, the first encounter between a severely handicapped child in a school and his new classmates should be much more carefully planned than is generally the case. Semmel and Dickson (1966) found information per se about exceptional children had little effect upon increasing positive response tendencies.

Chigier and Chigier (1970) noted the useful contribution which positive teaching on disability and the 'correct' attitude to adopt towards it can make. Anderson's case studies (1973a)of successful integration confirms this point of view. It is too often the case that attempts to educate the public are either very emotive or dully informative and that seldom are the public offered constructive alternative ways of looking at the disability (Chigier and Chigier, 1970). Force (1956) emphasized the need for teachers to make deliberate efforts to interpret physically handicapped children to normal children. In order to do this they must first re-examine their own attitudes (Conine, 1969).

In summary the studies mentioned in this section have contributed towards the understanding of some of the factors involved in the social relationships of handicapped and non-handicapped individuals. The relationship between social rejection and psychological development is a complex interaction in that, although social rejection may well adversely affect a child's emotinal adjustment, it is also true that physically handicapped children may be rejected because of their undesirable behavioural characteristics (Jacobs and Pierce, 1968; Richardson, 1974). In practice it is difficult to determine which is cause and which the effect.

In this review no attention has been paid to the social relationships or attitudes to nonvisible handicaps.This is not because these are of less importance or

or the origin of fewer problems but rather that the present investigation is restricted to the study of visible physical handicaps.

III. Family Attitudes and Family Relationships

A tenet of developmental psychology is that the early familial environment, especially the emotional tone of the parent-child relationship, is a fundamental factor influencing a child's psychological development. Much research has been undertaken in an endeavour to isolate those familial environmental factors which directly affect the child's psychological development. The personalities resulting from these factors have also been investigated (Symonds, 1939; Radke, 1946; Hoffman & Lippit, 1960). This research "has often been inadequate, and results have been contradictory, leaving a confused picture of the relationships involved" (Van Slyke and Leton, 1965). The influence of family relationships on the child's adjustment has generally been considered in terms of the parents' attitudes toward the child.

Sufficient research has accumulated to indicate that a more profitable approach is to elicit the child's picture of its relations with its parents. It is believed that more crucial than the parents' attitudes and behaviour is the child's interpretation of them. Serot and Teevan, (1961) showed that a) a child's adjustment is related to perception of his relationship with his family, b) the child's perception of the relationship is unrelated to his parents' perception of the same, and c) the parents'

perception of the relationship is unrelated to his child's adjustment. However, this approach using a child's perceptions of his/her parents is not without problems. Attempts to identify cause-and-effect relationships are particularly difficult.

Research with handicapped children has shown the importance of parental attitudes and family stability in a child's emotional adjustment (Carter and Chess, 1951; Bice, 1954; Miller, 1958; Saenger, 1962; Gringas, 1964; Carnegie United Kingdom Trust, 1964; Neuhaus, 1969; Rutter et al., 1970a;McMichael, 1971). Gulliford (1971) pointed out that the effect of the emotional experiences provided by the family are likely to be intensified in a child with a handicap owing to his/her more limited range of emotional and social experience.

It is frequently stated that parents of handicapped children display strong emotional reactions to their predicament (MacKeith, 1973). Roith (1974) on the other hand, claims that he has found the vast majority of parents of mentally handicapped children as normal as the parents of ordinary children. Boles (1959) with respect to anxiety, guilt, rejection and unrealistic attitudes, found no significant differences between the mothers of children with cerebral palsy and those of non-handicapped children. The mothers of the handicapped children were, however, more over-protective and experienced conflicts in their marriages. Barsch (1968) and Hewett et al. (1970) also suggest that parents of children with cerebral palsy are not as different from parents of normal children as is

sometimes stated. These authors found that child-rearing practices with handicapped children were similar to those used with normal children, although some allowances were made for the handicap.

Schaffer (1964) has described the "too-cohesive family" where not only the mother's life but also the father's and siblings' become excessively centred on the handicapped child, to the detriment of the emotional growth and functioning of the family unit. This was apparently a way of avoiding conflict and tension. Bentovim (1972) mentioned the possibility for a normal sibling to become deprived because so much attention is lavished on the handicapped child. There may also "be a diversion of feelings and scapegoating of the normal sibling, who can be rejected where the handicapped can not. Consequently he may feel it was his fault, expect punishment, provoke it or become anxious or depressed" (p.133).

The Carnegie Report (1964) expressed concern about the extent to which the siblings of a handicapped child were deprived of their parents' time and emotional resources. Tew and Laurence (1973) recently provided evidence of serious emotional risks in the siblings of children who were affected with spina bifida. When compared with a control group they were four times as likely to have scores in the maladjusted range on the Bristol Social Adjustment Guide, and half as likely again to score in the unsettled range. The siblings of the slightly handicapped child had the highest maladjustment scores, followed by the

siblings of the severely handicapped group. It made no difference to the siblings' maladjustment scores if the handicapped child attended a residential school or remained at home.

There has been little research on the determinants of parental attitudes. The relationship between social class and reaction to the physical disability has been studied by Dow (1965). His hypothesis was that reaction to disability is more severe in lower class families due to their dependence on physical means in order to obtain economic success. The results, however, showed no consistent class bias. The author concluded that "a better understanding of the reaction to disability may be found in an analysis of the child's prognosis, the family's structure or size, and the individual's attitude toward the importance of physique" (p.61).

Boles (1959) and Gambrill (1963) found that religion accounted for some of the variance in parental attitudes and behaviour while McMichael (1971) found that parental attitudes and behaviour were related to their own marital tensions, parental ill health and social conditions as well as the prognosis of the child.

The reality of parental expectations about the handicapped child has been suggested as an important factor in their perception. Several researchers have found that mothers of physically handicapped children have a tendency to overestimate the capacity of the child (Love, 1970). Jensen and Kogan (1962) found that children who are physically or intellectually handicapped are more likely to be rated

unrealistically than are less handicapped children. Some workers do not agree with the conclusion that 'overestimation' is affected by the child's age and severity of handicap (Barclay & Vaught, 1964; Keith & Markie, 1969). In fact Miller (1958) found that parents with severely handicapped children were the most accepting of the handicap and that their worries tended to be realistic ones. Miller considered that parents of the slightly handicapped had more difficulty in accepting and recognizing the handicap with the result that too much was expected of the child. The children with mild handicaps were, she found, less well adjusted than the children with severe handicaps.

This is an area requiring more careful investigation, not only for further clarification of the issues, but also because of its relevance in the determination of the criteria for the placement of the physically handicapped child in an ordinary school. As Gulliford (1971) pointed out "it is not only the degree of disability but the child's personality and the parents' attitudes and expectations which have to be taken into account" (p.184).

IV. Educational Attainment

Scholastic success and failure have been shown to play an important role in the development of childrens' self-esteem and attitudes to school. Bower (1962) wrote, "those children who are able to be successful are rewarded, find wholesome satisfactions in what they are doing, are friendly to the school and its' values, and are encouraged to invest more of themselves in their school activities.

Conversely those who are not successful in academic activities find little reward in them, perceive themselves negatively, are perceived by their peers negatively and are thereby unable to see the school or its activities in any constructive manner. The school to them becomes an unfriendly often persecuting institution with little opportunity for real satisfaction" (p.613,614)

In view of the interdependence of adjustment and school achievement it is surprising that the educational attainments of children with chronic physical disorders have been subject to little systematic investigation.

Educational achievement in children with physical handicaps not involving any brain abnormality

In their reviews of research literature on children with orthopaedic handicaps, Hollinshead (1953) and Hunt (1966) stated that little research has been published on educational abilities and needs of such children. Recently when reading ability was assessed, Kellmer Pringle and Fiddes (1970) found little difference between the educational attainments of physically handicapped children and those of normal children. In both studies there was some difference in numerical ability. Kellmer Pringle and Fiddes found that twice as many 'thalidomide children' as normal children had low scores. The differences were not significant in Anderson's study although the handicapped group was of less ability than were their normal classmates.

The handicapped children in both these studies mainly attended ordinary schools. This would indicate that

an orthopaedically handicapped child can do equally well in an ordinary school. The benefits appear to be gained without undue strain. In the Anderson study, the handicapped children without neurological abnormalities showed a lower rate of deviant behaviour (9.0%) than did the controls (19.0%).

Yule and Rutter (1970) found that in their sample the handicapped children attending ordinary schools were significantly more retarded in reading than was the control group. The frequency of reading retardation in the handicapped showed some association with the frequency of absence from school. In the general population the rate of absenteeism from school was not correlated with reading achievement. The authors suggested that frequent short absences had probably led to discouragement and the lowering of morale and confidence with consequent effects on the children's attitudes to work and thereby to their achievment. This study is perhaps not comparable with Kellmer Pringle and Fiddes (1970) and Anderson's (1973a) as it contained a higher proportion of medical rather than orthopaedic disorders.

There is evidence which suggests that educational attainments are lower in special schools. The "thalidomide children" who attended such schools in Kellmer Pringle and Fiddes' study (1970) were poorer in both reading and arithmetic than were those in ordinary schools. They tended to be "under-achievers".

The factors adversely affecting the scholastic progress of children in special schools, were thought by the authors to be (a) the greater severity of their physical

handicap with consequent poor attendance and (b) a more limited intellectual ability. In a special school there are additional factors which may depress still further the child's level of academic attainment. These are a) a shorter school day, b) fatigue due to a lengthier journey to get to school c) a lower standard of work because of a high proportion of dull children and d) most importantly a lower expectation on the part of the teachers.

Segal (1971) also found a high proportion of academic backwardness in the special school which he studied. He did not separate the educational attainments of the orthopaedically handicapped from those with additional neurological involvement. Of interest, was the finding that those pupils with restricted mobility received higher attainment quotients than did pupils who had full use of their legs. An interpretation of better motivation and greater striving was offered. The teachers observed that the immobilised pupils worked, notably at arithmetic, while those who were fully mobile were at play.

Kellmer Pringle and Fiddes (1970) considered that given individual help and careful planning, some of the special school children might benefit by a move to ordinary schools. Pilling (1972) observed that it would obviously not be justified to advocate, at this stage, ordinary school for all physically handicapped children without neurological disorders, however severe the handicap. She considered that what was required was research that explored the factors which helped a child achieve academic success in an

ordinary school without promoting emotional stress. In Anderson's study (1973a) the following factors turned out to be of paramount importance in determining the likelihood of academic success for a physically handicapped child in an ordinary school: 1) whether or not there was neurological impairment; 2) the intelligence level, which was likely to be closely associated with the extent and nature of intellectual impairment; 3) the social class membership and the number of children in the family. In contrast to these factors, Anderson found that the size of class in which the child is placed was of little importance. Also unimportant was the exact nature of the physical disorder (provided that there was no neurological disorder) and the severity of the handicap.

With further evidence of this nature it should be possible to suggest criteria which could be used in a child's placement. At present placement depends mainly on the policy of the particular local authority (Haskell & Anderson, 1969).

Educational attainment in children with physical handicaps and neurological abnormalities.

Cerebral Palsy

The educational attainments of children with cerebral palsy have been comprehensively reviewed by Pilling (1973a).

Research has shown children with cerebral palsy to be more backward in reading than are non-handicapped children of the same age (Cockburn, 1961; Barsch and Rudell, 1962; Rutter et al., 1970b; Yule and Rutter, 1970; Segal,

1971; Anderson, 1973a). The overall academic attainment was also reduced (Cockburn, 1961; Segal, 1971; Anderson, 1973a). This was only in part explained by the high proportion of children of below average intelligence suffering from cerebral palsy.

The IQ distribution of children with cerebral palsy has been analysed by several authors (Greenbaum and Buehler, 1960; Ingram, 1964; Stephen, 1965; Nielson, 1966; Rutter et al., 1970b) The amount of disagreement is small in view of the difficulties of carrying out meaningful tests (Stephen, 1965). There is, however, less agreement on the relation between intelligence and the different types of cerebral palsy (Dinnage, 1970).

Cockburn (1961) found that attainments of children with cerebral palsy when compared with those of the average child, improved as the IQ increased and as the severity of the physical handicap decreased. Bowley (1967b) in a study of the school progress of 64 children with cerebral palsy noted that 23 children made poor progress. The primary cause appeared to be low intelligence but speech defects, poor manual control and poor visuo-motor ability were additional handicaps.

That factors other than the intellectual level are involved in the educational backwardness of children with cerebral palsy has also be indicated by other studies (Gardner, 1961; Rutter et al., 1970b;Yule & Rutter, 1970).

Haskell (1973) found that in children with cerebral palsy the following factors adversely affected attainment in arithmetic:-

1. In the case of motor handicap, a deprivation of sensorimoter experience especially in the preschool period.
2. A higher incidence of ocular defects, especially squint, leading to less efficiency than normal in simple tasks involving movement of the eyes, for example, in computation.
3. Disorders of perception leading to difficulties in recognising shapes, in matching and discriminating forms, in distinguishing figure from background, and in integrating the constituent elements to form a whole.
4. Frequent disturbances in visuomotor skills, leading to a poorer performance on visuomotor tasks such as copying or constructing shapes as compared with such abilities in normal children.
5. Difficulty in making generalisations affecting the child's ability to grasp mathematical concepts.
6. A greater distractability than in normal children. This particularly affects arithmetical attainment since one of the major determinants of success in the working of sums is the degree to which a pupil can keep his mind persistently on the task in hand (Shonell and Schonell, 1957).
7. A tendency to perseverate.
8. A higher incidence of emotional disturbance than is found in normal children.

Haskell (1973) claims that these factors should be considered only in addition to those known to affect "non-cerebral palsied children". For example, absence from school, whether intermittent or prolonged, was listed by Schonell and Schonell (1957) as one of the most important causes of lack of ability in arithmetic. They considered that arithmetic more than any other subject is susceptible to the influences of absences. From the many studies reviewed by Haskell (1973) emotional factors also appear to contribute significantly to poor attainment in arithmetic. Of these factors, temperamental characteristics, particularly anxiety and emotional disturbance caused by unsympathetic attitudes of teachers towards a child's initial failures, are of major importance.

The proportion of children with cerebral palsy attending ordinary schools varies between 25 and 50 per cent (Cockburn, 1961; Rutter et al., 1970b; Hewett, 1970). The type of cerebral palsy seems to be a determining factor in school placement (Ingram, 1955, 1964; Woods, 1957; Rutter et al., 1970b). For example, few children with bilateral hemiplegia attend ordinary schools.

In a follow-up study of the education of children with cerebral palsy (diplegics, quadriplegics, hemiplegics and 'athetoids' being in about equal numbers) Bowley (1967a) found that 28 out of the 41 children of average or higher intelligence were 'making educational progress commensurate with their estimated ability', despite quite severe physical handicaps in some of them. Eleven of the children (mainly those of above average intelligence) were attending ordinary school and only three were making below average progress. In contrast, Marlow et al. (1968) showed that only five of 10 children attending ordinary

school were reading at an acceptable level commensurate with their chronological and mental ages. The children had been transferred to ordinary schools at the age of five or six years. The authors suggested that it would be better if such children remained at special schools or were admitted into a reception class at the ordinary school until their learning difficulties had been overcome. In view of Anderson's findings (1973a) the children with cerebral palsy who are most likely to succeed in ordinary schools are those of good intelligence and who come from social class I and II and from a small family.

Spina Bifida

A comprehensive review of the educational status of children handicapped by spina bifida has recently been published by Pilling (1973b). Anderson (1973b) reviewed the clinical and experimental studies from 1962-72 which related to general intellectual functioning and to specific cognitive deficits in children with spina bifida and hydrocephalus.

Both of these reviews illustrate the relationship between the intelligence levels of children with spina bifida and the precision of the diagnosis of these children. They both claim that children with meningocele are generally of normal intelligence. On the other hand, children with myelomeningocele and associated hydrocephalus may be of high intelligence but on average are less intelligent than those without the complication of hydrocephalus. In contrast to these findings Tew and Laurence (1975) showed that children with spina bifida without hydrocephalus were below average (mean IQ = 83.8) and those with shunt-treated

hydrocephalus had scores which generally were incompatible with normal levels of intelligence (mean IQ = 70.0). Laurence and Laurence (1975) reported sex differences in IQ scores for spina bifida children. Girls had a poorer intellectual outlook than boys. The reasons for this difference remain obscure. Badell-Ribera et al. (1966) looked at the relationship between intelligence and severity of handicap. They found that only when there was a history of hydrocephalus did the children in the severely disabled groups achieve significantly lower scores than the less disabled.

The verbal ability of children with spina bifida has been the subject of much controversy. Clinicians, teachers and parents have frequently commented on the superior verbal ability of children with spina bifida. Empirical research has, however, failed to show that these children are superior to normal children in language skills as measured by the Illinois Test of Psycholinguistic Abilities (ITPA) (Swisher & Pinsker, 1971), in vocabulary learning or grammatical construction, (Parsons, 1968), or in short term verbal memory (Parsons, 1969). It does appear that they are stronger in some aspects of verbal ability. For example, Swisher and Pinsker (1971) found that on the ITPA they performed better on tests of grammatical ability than on those concerned with the understanding and meaning of words. Parsons (1969) suggested that the discrepancy between the empirical evidence and the lay observations of these children is that verbal ability is

good when compared with other intellectual weaknesses. Such verbal ability is obvious to parents, clinicians and teachers. Diller et al. (1966) suggested that parental anxiety and pressure and the increased contact with adults resulting from severe motor disability may interact with neurological impairment to produce this atypical verbal behaviour.

Few studies are available which deal with the academic attainments of children with spina bifida. Shakespeare (1974) mentioned that "spina bifida are often educationally backward... three-quarters of them being in need of skilled remedial help in educational skills" (p.79). The author, however, does not provide her source of information.

Tew and Laurence (1972) studied 58 surviving children from those born (455) with spina bifida in South Wales between 1956-62. The main criterion for school placement was intelligence. Forty-three were attending ordinary schools and 13 special schools. Over a third of those with myelomeningocele were retarded by one to four years in reading ability in relation to their chronological age, and over three-quarters were retarded in arithmetic. A very similar degree of retardation was found in those with meningocele. This was surprising considering that their intelligence was higher and their physical handicap less severe. In the light of these findings, the authors suggested that predictions about school progress should not be made on the basis of intelligence tests alone as these may conceal subtle learning difficulties. Anderson and

Haskell (1973) describe a series of experiments by Miller and Sethi which confirm the presence of specific spatial and motor deficits. Such deficits have important implications for the teaching of children with spina bifida.

Anderson (1973a) emphasizes that to cope with the needs of physically handicapped children ordinary school must be made "special". Welbourn (1975)in her follow-up study of children with spina bifida placed in ordinary schools in South Gloucestershire found that success frequently depended on the quality of the special provisions provided by the school.

In summary, information is available about the educational status of children with different physical handicaps and the specific deficits involved with each type and degree of handicap. Little, however, is known about the comparative levels of attainment of the physically handicapped children attending ordinary and special schools. It is to be hoped that the present study will provide further information on this subject.

Summary

From the review of the literature it is seen that physically handicapped children are not 'inevitably maladjusted'. Furthermore there is no evidence of a definitive association between particular physical disability and any particular emotional disorder.

Many of the controversial findings on the social and emotional adjustment of physically handicapped children have probably arisen from study of very heterogeneous groups of handicapped children. Differences may also have resulted from very varied criteria of adjustment.

Recent research has pointed to the importance of distinguishing between those with and without neurological abnormalities. There are results that children with physical and neurological handicaps have a higher rate of emotional disorders than those who are physically but not neurologically handicapped. The reasons for this difference are not fully understood. However, there is a strong suggestion that neurologically abnormal individuals because of their organic brain dysfunction are predisposed to psychosocial stress. It must be emphasised that there is little in the literature to suggest that neurologically abnormal children have any specific type of psychiatric disorder.

There are some data which suggest that handicapped children may experience more difficulty in social relationships than the non-handicapped. Again the exact type of disability appears to be an important determinant. Some

findings suggest that peer group attitudes towards children with cerebral palsy are less favourable than are those to children with other handicapping conditions. It has been shown that many factors other than type of disability are involved in determining the quality of relationships between disabled and normal individuals.

Much consideration has been given to the study of parent-child relationships. Methodologically this is an area which bears close scrutiny. There seems to be general agreement that parental attitudes towards the child and its disability are of considerable importance to the child's adjustment, although the determinants of parental attitudes themselves require further research. The factors which have been shown to bear some relationship to parental attitudes are social class, religion, the child's prognosis,marital tensions, parental ill health, social conditions and the reality of parental expectations about the child.

In contrast to our knowledge of parent-child relationships little is known about the relationships which may exist between the child's social, emotional and educational adjustment and the type of school attended. For example, some studies have shown that disabled children can cope satisfactorily with ordinary school while other studies have pointed to social discrimination against handicapped children in ordinary schools. With regard to educational attainments of handicapped children special schools have been found to achieve generally poorer results. The data which are available are controversial and inconclusive.

This position is probably due to the very different research designs employed, to the heterogeneous groups of ages and disabilities which have been studied. The wide range of tests and measures used has further compounded the problems. Well-designed studies such as that of Anderson (1973a) have taught us much with regard to the factors which are related to a child's adjustment in school. These studies have, however, invariably concentrated on only one type of school. There is, therefore, a lack of data on the relative effectiveness of alternative forms of education. The present study was undertaken to help correct this deficiency.

II DESIGN OF RESEARCH

CHAPTER 3

METHODS

Object of Study

The object of the study was:

1. to assemble data which would give an estimate of a physically handicapped child's social and emotional adjustment. Data were collected from ordinary and special schools, including both day and residential. The variables selected to provide an understanding of the child's level of adjustment were:-

a) intelligence

b) school attainment

c) attitudes of the child to the school situation

d) attitudes of the classmates to the 'child' (PH in ordinary schools only)

e) social and emotional adjustment

f) attitudes of parents to child-rearing

g) attitudes of child to his family

A rationale for the inclusion of these topics will be provided in conjunction with the tests chosen to measure them.

2. to compare the P.H. children in the different types of schools on the above variables.

3. to compare the results obtained from the P.H. children on the above variables with that of normal children.

Design of Investigation

Selection procedure for the 114 physically handicapped children.

The criteria for selection of the 114 physically handicapped children were as follows:-

a) they were boys or girls of nine to eleven years of age.
b) they were of normal intelligence.
c) they had visible physical handicaps affecting movement.
d) they were living within the boundaries of the city of Edinburgh or in the adjacent counties.
e) they were attending an ordinary or a special school either day or residential.

The rationale for these selection criteria were:

Age

The age restriction of the children to between nine and eleven years of age was due to a decision to limit the study of the integration and segregation issue to primary schools. It was believed that the inclusion of secondary school children was beyong the scope of this study. Such a sample would have been heterogeneous unless a great deal of time and resources were available in which to obtain a valid representative group. It was also thought that any long range plans for changes in the educational policy of physically handicapped children must begin with an assessment of the role of primary education in their development.

Nine years was taken as the minimum age for inclusion in the study as it was considered necessary for the children to have had time to become accustomed to their particular type of school. Children who had spent less than six months in their particular school environment were not included in the study.

Intelligence

Normal intelligence assessed psychometrically was chosen as a criteria of selection because it was deemed worthwhile to base the study on the childrens' assessment of themselves and their situation. Research studies to date in the field of special education have relied strongly on other peoples' assessment of the child. However, evidence is now available to show there is disagreement among teachers, clinicians and parents on the nature of problem behaviour (Rutter et al., 1970b). The author also considers that integration/segregation of of P.H. children with mental retardation poses different problems to those of physically handicapped children of normal intelligence.

Type of handicap

A visible physical handicap affecting movement was a requirement to make the sample of handicapped children in the present study as homogeneous as possible. The psychology of physical handicaps which are not obvious are considered different to those which are apparent (Goffman, 1973; Rutter, et al., 1970b)'Delicate' children and those with minimal visible handicaps and who might be listed on the

Department of School Health's register as 'Physically Handicapped' were, therefore, not considered for this investigation.

Type of school

The three types of educational facilities for comparison were a) the ordinary day school, b) the special day school and c) the special residential school. Such schools represent the major different sources of schooling in the U.K. for the handicapped child. They are also the types most frequently quoted in a discussion on the issue of integration/segregation.

Children dependent on home-teaching or hospital schools were not considered because of the difficulty of finding normal controls. There is also the likelihood that facilitating children with education of this nature is usually a temporary measure only.

Sources of information/case finding

The sources of information for the selection of possible children for the study overlapped considerably. The more important sources were:

1. the case notes of the medical officers in the Department of School Health. The case notes were examined in order to list the children who met the criteria for selection.
2. the case notes provided by the Scottish Council for the Care of Spastics.
3. information from clinicians of the Royal Hospital for Sick Children in Edinburgh who provided their complete register of children with spina bifida.

4. data from special residential schools run by societies or associations. These sources provided the subjects for study between 1970-1973.

When the case notes stated that a child was of 'borderline' intelligence, he was listed. The child was dropped from the study if the intellectual assessment suggested subnormal intelligence.

Possible sources of cases which were not used

1. Under the National Health System, everyone is on the list of a general practitioner for medical care. Ingram (1955) however, found a disappointing response from general practitioners to his request for information regarding an epidemiological study. It was decided that the likely benefit of seeking data on physically handicapped children from general practitioners would not justify the extra additional work involved.
2. Private schools in Edinburgh might have been a source of information. However, the register in the Department of Health and the other sources of information already mentioned included most of the children who attended private schools.

It must be emphasized that the sample consists of all physically handicapped children in Edinburgh on the register who fulfilled the study's requirements. The study was initially planned for Edinburgh alone. However, the number of physically handicapped children, particularly in ordinary schools who met the needs of the research design was small

(approximately 50% of the final sample). This is undoubtedly due to the fact (Anderson 1973a) that wherever areas are well served by special schools, children tend not to be sent to ordinary schools unless their handicaps are mild. The study was, therefore, extended to include a number of children from local authority areas outside Edinburgh. The areas of the local authorities involved were those responsible for children whose names appeared on the registers of the sources described earlier.

Selection procedure for the 114 control children

A normal child was chosen as a control for each handicapped child in the sample. The children were matched on the following variables:

a) age

b) sex

c) IQ

d) social class

e) family composition (wherever possible)

f) type of school attended

The controls for both the physically handicapped children at special day and ordinary day schools were chosen from the latter on the basis of similar class or form.

The controls for the handicapped children attending special residential schools were taken from ordinary boarding schools. Matching these children presented some problems. The boarding schools were selective in their intake of pupils and few children came from large size families. These facts made matching for social class,

intelligence and family size complicated.

TESTS AND MEASUREMENTS

Considerable attention was given in the choice of suitable test material. Studies were made of comprehensive works on psychological testing (Buros, 1949, 1959, 1965; Cronbach, 1961; Anastasi, 1967; Vernon, 1969; Mussen, 1967). There is general agreement that most tests have their limitations, that more research is needed and that the whole field is one of promise rather than of performance.

Vernon (1965) suggested that a test's validity is the first consideration. If possible, experimental proof of this should be given. Reliability is also important. Tests whose scores do not yield a reliability coefficient of 0.90 or over in representative group were avoided where possible. The age range of the tests was studied and the norms examined for their differentiating power.

The tests finally chosen for this study were the ones where there was a consensus of opinion that, in spite of their acknowledged weaknesses, they had proved their worth.

Many writers on personality assessment have emphasized the importance of using several indices, Burt (1945) states "assessments based on the combined approach have a far higher validity than those based on one type of procedure only" (p.119). Eysenck (1960) points out, "investigations should be as broadly based as possible" (p.427). Allport (1961) writes, "confidence cannot yet be

placed in single instruments. We need well-conceived comprehensive batteries" (p.453). It was decided, therefore, to use a combination of measures.

The following tests were selected for the purpose of the present study and will now be discussed in detail. The rationale for their inclusion will be provided in conjunction with the description of each test.

1.(a) Raven's Coloured Progressive Matrices, Sets A, Ab B. (Raven, 1956).

(b) Raven's Progressive Matrices, A, B, C, D, E. (Raven, 1960)

2.(a) The Crichton Vocabulary Scale (Raven, 1961).

(b) The Mill Hill Vocabulary Scale. (Raven, 1965).

3. Vernon's Graded Word Reading Test (Vernon, 1969)

4. WISC Arithmetic Sub-Scale. (Wechsler, 1949).

5. Social Discrinination Test. (Centers and Centers, 1963, modified by author).

6. The California Test of Personality, Form AA, (Thorpe, Clark and Tiegs, 1953).

7. The Junior Eysenck Personality Inventory. (Eysenck, 1965).

8. Children's Attitude Scales. (Barker Lunn, 1969).

9. The Bristol Social Adjustment Guides. (Stott, 1963).

10. Teacher Assessment Schedule. (Author).

11. Shoben's University of Southern California (USC) Parent Attitude Survey. (Shoben, 1949).

12. The Family Relations Test. (Bene and Anthony, 1957).

COLOURED PROGRESSIVE MATRICES, SETS A, Ab, B

(Raven, 1956) and

CRICHTON VOCABULARY SCALE (Raven, 1961)

These two tests are disigned to be used together in place of a single test of general intelligence. It is thus possible to assess separately a) the subjects present capacity for intellectual activity, b) the fund of information acquired whatever the present capacity for intellectual activity; c) the psychological significance of discrepancies between the two resultants.

Raven's Coloured Progressive Matrices is derived from and represents an elaboration of Raven's Progressive Matrices (Raven, 1938). It has its rationale in Spearman's cognitive principles (Spearman, 1923). While Raven (1956) does not consider his Progressive Matrices test by itself an instrument for measuring intellectual ability, it's saturation with Spearman's factor 'g' has been reported to be as high as .80 and .82 in studies quoted by Freyburg (1966). Burke (1958) demonstrated the successful extensive use of the two main forms of the test (Sets A, Ab, B and A-E). He refers to studies of the Progressive Matrices published for many groups e.g. the deaf, the cerebral palsied, mental defectives, adult psychiatric patients and child guidance clinic patients. Burke was satisfied with "the abundant evidence of its concurrent validity" as a test of what is commonly known as intelligence.

Percentile norms for the Coloured Progressive Matrices (BOOK FORM) are provided for each half year interval

between five-and-a-half and eleven years of age. These norms are based on a smaple of 608 Dumfries school children. Test-retest reliability is reported as .60 for 6 year olds, .8 for 9 year olds and .9 over the whole range of development for which the test is constructed (Raven, 1956). Freyburg (1966) considers Raven's quoted reliability coefficients to be an underestimate. Martin and Wiechers (1954) showed that Coloured Progressive Matrices correlated highly (0.91) with the WISC. Freyburg (1966) argues, that would be unlikely if either of the tests had a high proportion of error variance.

In view of this acceptable reliability and validity the Coloured Progressive Matrices was chosen to assess the child's present intellectual ability, irrespective of his general knowledge. An index of this capacity was necessary to select and match the control children. Children with physical handicaps often suffer educationally by frequent absence from school while undergoing necessary medical treatment. It was believed that in these circumstances the 'matrix' test would give a fairer assessment of the child's native intelligence than the standard tests of verbal intelligence. Other qualities made this test particularly attractive for this investigation:

1. Its rapidity of administration. Children with physical handicaps are often susceptible to fatigue which make shorter testing sessions desirable (Reynell, 1970).

2. No time limit. Physically handicapped children may be at a disadvantage when time restrictions are imposed (Sattler and Tozier, 1968).
3. Flexible method of response. The responses may be indicated orally, in writing, or by pointing, or nodding. This variety is especially appropriate for the child with physical handicap.

Administration. The test was administered individually and without any time restrictions to all the children aged nine to eleven-and-a-half years of age. They indicated their responses by whichever method was most convenient to them. The responses were recorded by the examiner.

Scoring. The test was scored by hand according to the standard directions for scoring in the manual. The raw scores were converted to standard scores for statistical analysis.

The Crichton Vocabulary Scale (Raven, 1961) is designed to provide an index of a person's general cultural attainments. The vocabulary scale consists of 80 words arranged in two approximately parallel sets of 40 words each. The order of the words in each set is based on the frequency with which children under eleven years of age were able to explain their meaning.

Percentile norms are provided for each half-year interval between four-and-a-half and eleven years. The norms are based on 608 children from schools in Dumfries. Re-test reliability is reported by Raven (1961) to be 0.98 for a group of children aged five to 10 years inclusive. Raven also shows the vocabulary scale to

correlate 0.94 with the Coloured Progressive Matrices, Sets A, Ab, B.

The Crichton Vocabulary Scale was chosen for this study to measure the child's verbal ability. It was felt that an index of this kind might reflect his cultural amenities and educational opportunities. Also in association with the Coloured Progressive Matrices it should provide an accurate assessment of the general intelligence. Any discrepancy between the two measures should be of psychological significance.

Administration. The vocabulary scale was administered individually to the children aged from nine to eleven-and-a-half years. Each was asked to explain in his/her own words the meaning of each word in turn. The responses were recorded by the examiner.

Scoring. The test was scored according to the standard directions in the manual. The raw scores were converted to standard scores for statistical analysis.

STANDARD PROGRESSIVE MATRICES, SETS A to E (Raven, 1960) and MILL HILL VOCABULARY SCALE, oral definitions form (Raven, 1965)

These two tests are similar in design to the Coloured Progressive Matrices and the Crichton Vocabulary Test, in that they complement each other in assessing intellectual ability.

The Standard Progressive Matrices, Sets A-E provide an index of intellectual capacity. The test was constructed

"on a priori assumption that is Spearman's principles of neogenesis were correct, it should provide a test suitable for comparing people with respect to their immediate capacities for observation and clear thinking" (Raven, 1960, p.1).

Percentile norms are provided for each half-year interval between eight and 14 years of age and for each five-year interval between 20 and 65 years. These norms are based on British samples, including 1,407 children, 3,665 Militiamen and 2,192 civilians. Retest reliability in groups of older children and adults who were moderately homogenous in age varies approximately between 0.83 and 0.93 (Raven, 1960). Correlations with the Mill Hill Vocabulary Scales range from 0.44 to 0.60 (Raven, 1960).

The Standard Progressive Matrices test was chosen for this study to supplement the Coloured Progressive Matrices. The norms for the latter apply only to children up to 11½ years of age whereas the former has norms above this age. A certain proportion of children in the present sample is older than eleven-and-a-half years. One could arguably have used this form for the whole sample. It was felt, however, that for the reasons stated earlier, the Coloured Progressive Matrices would facilitate greater ease and speed of administration with the younger children. The Coloured Progressive Matrices test consists of three series of matrix designs compared with five in the Standard Progressive Matrices.

Administration and Scoring. The test was administered individually without time restrictions to the children over 11½ years of age. The children indicated their responses by whichever method was most convenient to them. These were recorded and scored by the examiner in accordance with the manual.

The Mill Hill Vocabulary Scale (Raven, 1965) is designed to provide an index of the intellectual level attained whatever the present capacity for intellectual activity.

The scale consists of 88 words arranged in order according to the frequency with which they are usually known. It is divided into two exactly parallel series of 44 words, Set A and Set B.

For the oral definitions percentile norms are provided for each interval from four-and-a-half to 14 years of age and for each five-year interval between 70 and 85. Raven (1960) reports test re-test reliability to range from 0.87 to 0.97. Correlations with the Progressive Matrices range from 0.44 to 0.60.

The Mill Hill Vocabulary Scale (MHVS) was chosen as a supplement to the Crichton Vocabulary Scales (CVS). The norms for the CVS apply only to children of eleven-and-a-half years and under, whereas the MHVS has norms beyond this age. As suitable norms are available the Mill Hill Vocabulary Scale would have been used for the whole sample were it not for the fact that the Crichton Vocabulary Scale was especially designed to be used in conjunction with the Coloured Progressive Matrices.

Administration and Scoring. The MHVS scale was administered individually to each child aged over eleven-and-a-half years. Each child was asked to explain in his/her own words the meaning of each work in turn. The responses were recorded and scored by the examiner according to the manual. The raw acores were converted to a standard score for statistical analysis.

GRADED WORD READING TEST (Vernon, 1969)

The Graded Word Reading Test is a test of oral pronunciation suitable for children from 5 years onwards. It is standardized with Scottish children. Vernon (1969) reports a reliability coefficient of 0.93 and the probable error of less than one-third of a year in 'Reading Age'. Validity studies (Vernon, 1969) show that the scale agrees with speed and comprehension tests and with teacher assessment.

It was thought important to this study to have some measure of reading ability which is one of the criteria of a child's educational attainment. It will be considered in the present study in relation to the child's adjusment. Scholastic success and failure have been found to play an important role in the development of childrens' self-esteem and attitudes to school (Douglas, 1967; Barker Lunn 1970). The Graded Word Reading Test was selected because of the speed and ease with which a reliable and 'valid' measure of the children's reading skills could be obtained.

Administration. The test was administered to each child according to the standard instructions in the manual.

Scoring. The test was scored according to the directions for scoring in the manual.

WECHSLER INTELLIGENCE SCALE FOR CHILDREN(WISC)

ARITHMETIC SUB-SCALE (Wechsler, 1949)

The WISC Arithmetic Sub-Scale is a test of mental arithmetic designed for use with children aged 5 to 15 years inclusive. The reliability and validity of the WISC is so well known that its use does not require justification. However, the test manual, cautions against the interpreting of scores obtained on the sub-tests of the WISC without refering to the reliability coefficients for that particular sub-test. The reliability coefficient for the Arithmetic sub-scale for children of 10½ years is reported to be 0.84 (Wechsler, 1949). It was thus considered that sufficient confidence could be placed in this test to give a reliable measure of the childrens' numerical skills.

It was considered that in addition to an index of the childrens' ability to read an assessment of the childrens' arithmetic ability would be a useful criterion in providing information about their school attainment. In this investigation it was necessary to use a procedure which did not constitute a written test of arithmetic. Written tests, such as Vernon's Graded Arithmetic Test, tend to be timed. Such tests would be unsuitable for the

children in the present sample many of whom had restricted use of their arms and hands. Burt's Graded Oral Test (1955) was also considered. This test has, however, to be converted to incorporate the metric system, and as Vernon (1968) has pointed out, it will then not be known if the order of difficulty and the norms still hold good. In view of these problems the WISC Arithmetic sub-test appears to be the obvious choice.

Administration. The test was administered to each child according to the standard instructions in the manual.

Scoring. The test was scored according to the directions for scoring in the manual.

SOCIAL DISCRIMINATION TEST -

This is a modified version of Centers and Centers (1963) Social discrimination questionnaire

Centers and Centers (1963) Social Discrimination Questionnaire is a 17-item questionnaire constructed to elicit attitudes about appearance, social relationships and popularity of children at school. These workers administered the test to "classmates of children with amputations and to classmates of non-amputee children in order to test the hypothesis that the presence of amputation represents a threat to the bodily integrity of the non-amputee which will be reflected in attitudes of greater rejection of amputee children than of non-amputees" (p.152). The questions present opportunities for preferment or rejection of individual children in a class. The items are:

1. Who is the best-liked boy in the class?
2. Who is the best liked girl in the class?
3. Who do you think is the happiest child in the class (either boy or girl)?
4. Who do you think is the saddest child in the class (either boy or girl)?
5. Which boy in the class do you like least?
6. Which girl in the class do you like least?
7. Which boy in the class is the most fun to play with?
8. Which girl in the class is the most fun to play with?
9. Which boy in the class do you like best?
10. Which girl in the class do you like best?
11. Who do you think is the best-looking boy in the class?
12. Who do you think is the prettiest girl in the class?
13. Who do you think is the child in the class who isn't as nice looking as the others (either boy or girl)?
14. Which boy in the class is the least fun to play with?
15. Which girl in the class is the least fun to play with?
16. Who is the boy that is liked least by the class?
17. Who is the girl that is liked least by the class?

The validity and reliability of the instrument has not been demonstrated. One can, however, regard it as being similar to a sociometric test in that it elicits the actual behaviour being studied; the choice of companions. As Evans (1963) has pointed out, in so far as a test does this, it is necessarily valid and no

outside criterion is necessary or possible. The only real question is whether the choices made are true or false.

The attitudes of the peer group toward the child with a physical handicap are of particular importance in deciding whether to integrate or segregate the disabled child. A measure of social acceptance of the physically handicapped child by his normal classmates was therefore considered desirable for this study. The Centers and Centers Social Discrimination questionnaire (1963) had already been of value in research and seemed particularly suited to the present sample.

Initially, the test was administered in pilot trials to normal primary school children in classes containing a physically handicapped child. The real object of the class visit was known only to the teacher. It became apparent that even though the questionnaire was administered individually it produced embarassment and reticence. The children frequently refused to answer the questions particularly the'negative items'. The isolated or rejected non-handicapped children appeared to have most difficulty, often citing themselves for the negative items. Perseveration of responses among shy defensive children was also frequently noted. These children took the 'easy way out' naming just one or two children from their class for all the positive and negative items. These difficulties, though common to sociometric studies (Evans, 1963), were not mentioned in the original communication from Centers and Centers (1963).

Because of these problems it was decided to devise and evaluate a modified technique. Each item on the Centers and Centers list was replaced by an equivalent one which related to the casting of a film. The new questionnaire was given in group form, each child writing down his/her answers.

The test was introduced as follows: "We are going to pretend we are making a film about the school Each one of you in the class can imagine you're the film director. I want you to write down on your sheet of paper the names of the people from this class whom you would choose to play the different parts in the film". It was emphasized that any one person could be chosen to play more than one of the parts. The new list was then read through, the modified items being as follows:

1. Whom would you choose to play the best-liked boy in the class?
2. Whom would you choose to play the best-liked girl in the class?
3. Whom would you choose to play the happiest child in the class?
4. Whom would you choose to play the saddest child in the class?
5. Now whom will we have to play the most unpopular school boy?
6. And whom will we have to play the most unpopular school girl?

7. Who should play the part of a boy who is lots of fun to play with?
8. Who should play the part of a girl who is lots of fun to play with?
9. If you were given a part which boy would you have as your best friend?
10. And which girl would you have as your best friend in the film?
11. Now whom will we have to play the best-looking boy in the class?
12. And who should play the prettiest girl in the class?
13. Now we want a boy or a girl to act the part of someone who is not so good-looking?
14. Who should play the part of a boy who is least fun to play with?
15. Which girl should play the part of someone who is least fun to play with?
16. Finally we need a boy to play the part of someone who is liked least by the class?
17. And a girl to play the part of someone who is liked least by the class?
18. What name would you give this film?

To validate this technique the first nine classes who had been given the Centers and Centers questionnaire were revisited after an interval of 3 to 6 months and the 'film method' was administered. The nine classes were mixed, the age range being from nine to 12

years and the class sizes from 21 to 37. Eight of these classes contained a single physically handicapped child.

In scoring both questionnaires, the Centers and Centers method was employed. Every response naming a child on Question 1 (or 2), 3, 7 (or 8), 9 10, and 11 (or 12), which provide an opportunity of approval or preforment was assigned a value of +1. Each response naming a child on Items 4, 5 (or 6), 13, 14 (or 15) and 16 (or 17), which provide opportunities for disapproval or rejection was given a weight of -1. A child's score was then computed as the algebraic resultant of the total responses to that child.

For the purpose of this validation study each child was ranked in its sex group of its class by both methods. The ranks were then compared using the Spearman p. Correction for ties were calculated when indicated. The correlations and their significance are shown in Table 3.1.

The results show that there is a good correlation between the two methods. The new method has some definite advantages over the Centers and Centers technique.

1. Questions were answered joyfully and with ease. The psychological trauma experienced by both the child and the tester using the old method was no longer evident with the film method. In the present sample the Centers and Centers method had 120 unanswered items (103 negative and 17 positive), the film method had 3 unanswered items (all negative).

Table 3.1 Rank correlations between questionnaire scores for nine classes

	BOYS			GIRLS		
CLASSES		n	significance		n	significance
1	.8857	14	.001	.9010	21	.001
2	.9030	10	.0200	.9076	14	.001
3	.9365	18	.001	.9140	15	.001
4	.8802	18	.001	.8800	14	.001
5	.8890	11	.001	.8400	17	.001
6	.8630	22	.001	.8900	14	.001
7	.8952	17	.001	.8960	14	.001
8	.9153	13	.001	.9285	8	.0216
9	.9562	15	.001	.9415	22	.001

2. There was a wide scatter of votes among the children. For example, a girl who ranked least popular using both methods received 85 negative votes in Centers and Centers test and 48 negative votes in the film version. Similarly a boy ranking most popular in both techniques received 50 positive votes on the old questionnaire compared with 28 on the new method. This would suggest that childrens' tendency to direct all their answers to the most popular/unpopular child was diminished.
3. Considerable time was saved, by testing in a group situation.
4. The true nature of the psychologist's presence in the classroom was completely disguised. The children

were invariably most eager to know when work on the film was starting!

5. Table 3.2 illustrates that the physically handicapped child was not excluded from parts in the film whether positive or negative, nor did the P.H. child become the scapegoat gaining all the negative roles. The tendency in fact was for the P.H. child to be mentioned more frequently both positively and negatively. This fact suggests that the film test by its disguise of motives allows the children more freedom of choice than the conventional techniques with their inhibiting direct questions.

Table 3.2 Comparative frequency of classmates naming the handicapped child by the old and new method.

		Centers and Centers Questionnaire			Film Questionnaire		
	P.H. Child	No. in Class	Positive Items	Negative Items	Total	Positive Items	Negative Items	Total
	1	32	0	0	0	1	3	4
	2	24	0	1	1	3	5	8
	3	35	0	10	10	0	6	6
	4	31	4	2	6	2	5	7
	5	36	0	0	0	0	0	0
	6	28	0	1	1	4	1	5
	7	33	5	4	9	3	4	7
	8	37	3	7	10	6	8	14
TOTAL	9	256	12	25	37	19	32	51

Administration. The questionnaire (modified version) was administered to all the classes involving children chosen for the study. However, only the data for physically handicapped children at ordinary day schools and their controls were processed for the present thesis.

Scoring. The questionnaires were scored according to the method outlined earlier.

CALIFORNIA TEST of PERSONALITY

(Thorpe, Clark & Tiegs, 1953)

This is an American test designed to provide information about the characteristics of the personal and social adjustment of individuals and of groups. It has five levels: Primary (aged 5-9), Elementary (aged 10-14), Intermediate (aged 13-16), Secondary (aged 15 and above) and Adult. Yes or No answers are required to questions such as:-

> Is it easy for you to play by yourself when you have to? (Primary Form)
>
> Are your friends and classmates usually interested in the things you do? (Elementary Form)

Emotional adjustment is sub-divided into six aspects:

A. Self-reliance.

B. Sense of personal worth.

C. Sense of personal freedom.

D. Feeling of belonging.

E. Withdrawing tendencies.

F. Nervous symptoms (freedom from).

Social adjustment also spans six aspects:

A. Social Standards.

B. Social Skills

C. Anti-social tendencies (freedom from)

D. Family relations.

E. School relations.

F. Community relations.

Percentile scores are calculated for Personal (Emotional) Adjustment, Social Adjustment and Total Adjustment as well as for these 12 aspects of personal and social adjustment.

The earlier edition of the California Test of Personality (Thorpe, Clark and Tiegs, 1943) was criticized by Schaffer and Spencer (Buros, 1949). They claimed low reliability of the subtests, a lack of data on the validity of the test, and limited information on the construction and standardization. Some of the criticisms of the early test are no longer valid (Buros, 1959). The norms have been improved. Samples are much larger and the cases are geographically more representative. Tests of internal consistency are reported for the revision in considerable detail. A fair degree of reliability is indicated for total adjustment as well as for the two main components, social and personal adjustment, and in particular for the lower scores. Evidence on validity is reported or referred to in the revised manual. Verner (1959) concludes his review of the test by stating, "All in all, in spite of criticism, as personality inventories go, the California

Test of Personality would appear to be among the better ones available" (p.724).

For these reasons it was felt that the California Test of Personality justified its inclusion in the present test battery in order to give some quantitative measure of the childrens' social and emotional adjustment. A standardised British self-report questionnaire or inventory would have been preferable. Few, however, are available. The California Test of Personality has previously been used in a variety of surveys and studies in this country (Chazan, 1970). It was chosen in preference to the others in view of a) the wide range of everyday life situations which it covers, and b) the suitability of the test items to the age range of the present sample.

Administration. The test was administered individually to each child. The Primary Level, Form AA, was employed with those children of nine years of age. The Elementary Level, Form AA, was used with those aged 10 and 11 years. All the statements were read to the children to overcome any problems associated with reading difficulties and also to minimize fatigue. The children indicated their responses verbally and these were recorded by the examiner.

Scoring. The test booklets were scored by hand according to the standard directions in the manual. For statistical purposes only the raw scores were computed. As the Primary Level Form consists of eight questions in each subtest compared with 12 in the Elementary Level Form, the scores were all standardised.

JUNIOR EYSENCK PERSONALITY INVENTORY

(Eysenck, 1965)

The Junior Eysenck Personality Inventory (J.E.P.I.) is a self-report test designed to measure the two major personality variables neuroticism/stability and extraversion/introversion which Eysenck and his colleagues have discussed in numerous publications (Eysenck, 1947, 1960; Eysenck & Rachman, 1965 a, b).

The scale is a development of the Maudsley Personality Inventory (Eysenck, 1959) and the Eysenck Personality Inventory (Eysenck & Eysenck, 1964) for adults.

The test consists of 60 items. Twenty-four of these measure extraversion, 24 assess neuroticism and 22 constitute the Lie scale for the detection of faking. 'Yes' or 'No' answers are required to the 60 questions, examples of which are as follows:-

Extraversion. "Would you rather be alone instead of meeting other children"?

Extraversion. "Are you usually happy and cheerful"?

Neuroticism. " Do you have many frightening dreams"?

Lie Scale. "Have you ever been cheeky to your parents"?

Normative information on extraversion and neuroticism is available for each year group from seven to 16 years of age (Eysenck, 1965). The norms for boys and girls are presented separately. Test-retest reliabilities for the scales average between 0.7 and 0.8. They tend to increase with age for extraversion, less so far for neuroticism, with the Lie score there is no obvious progression. Eysenck (1971) provides data on the validity of the

J.E.P.I. but she points out that too little is known about the validity of the scales to make claims for its use, other than as an instrument for experimentation. Harbinson (1970) examined the relationship between the J.E.P.I. and the New Junior Maudsley Inventory (Furneaux and Gibson, 1966). A high level of relationship was demonstrated between the two tests for both extraversion and neuroticism factors. The relationship between the Lie scales showed that in none of the age groups did the correlation reach significance. Harbinson (1970) thus warns against using the Lie scale for making clinical decisions. Hall (1969) also demonstrated the validity of the J.E.P.I. by the significant correlations of the extraversion and neuroticism scales to the Bristol Social Adjustment Guides (Stott, 1958).

The Junior Eysenck Personality Scale was included in the present study to assess the degree of extraversion and neuroticism in the children in an attempt to provide a fuller understanding of their social and emotional adjustment. It is realised that extraversion is not synonymous with social adjustment but it has been suggested that a socially mature person should have developed a fair degree of extraversion. The Bristol Social Adjustment Guides suggest that the socially adjusted child will be friendly, work steadily, show persistence, be a good mixer, be generally kind and helpful, popular, and free of fidgets and psychosomatic disorders. Neuroticism, it was felt will indicate something about the emotional

adjustment or maladjustment of the children. The Lie scale may give some indication of the childrens' tendency to deceive. A measure of extraversion, neuroticism and 'faking good' was, therefore, considered useful. The usefulness of the J.E.P.I. as a research tool has been demonstrated by its frequent inclusion in studies pertaining to personality factors and educational attainment in Great Britain (Entwhistle, 1973). It was thought it would be particularly suitable for this study because it is a) one of few British self-report questionnaires or inventories, b) it is easy and quick to apply and score and c) it requires only simple verbal responses.

Administration. The inventory was administered individually to all the children. The items were read out by the tester to overcome any problems which might arise owing to a poor level of reading and to reduce the effects of fatigue. Items 9, 11, 18, 26 and 32 were explained in greater detail to all the subjects. Cookson (1969) reported that children found these items difficult to understand. Unfortunately the research was in progress before it was possible to avail of the results outlined by Nias (1972). He points out that the practice of explicitly drawing attention to the Lie scale helps to reduce the amount of 'faking good'.

The subjects indicated their responses orally and the examiner recorded their responses.

Scoring. The test booklets were scored by hand according to the standard directions for scoring given in the manual.

CHILDREN'S ATTITUDE SCALE

(Barker Lunn, 1968)

This is an attitude questionnaire consisting of 79 statements designed to measure the children's attitude to school. The child is asked to indicate his degree of agreement on a 3-point scale - agree, unsure, or disagree. The items form ten attitude scales. These are:-

a) Attitude to School

This scale is made up of six items concerned with general rather than specific aspects of school. For example, it includes statements such as 'School is fun', 'I would leave school tomorrow if I could', and 'I like school'.

b) Interest in School Work

This scale is composed of six questions concerned with both general school work and particular lessons. Examples are 'I enjoy most school work', and 'We spend too much time doing arithmetic'.

c) Importance of Doing Well

There are five items which stress achievement orientation, e.g., 'I work and try very hard in school', and 'Doing well at school is most important to me'.

d) Attitude to Class

This scale contains eight items which refer to the preference, or otherwise, for being a member of a particular school class. For example, 'I'd rather be in my class than the others for my age', and 'I hate being in the class I'm in now'.

e) 'Other' image of class

This scale has six items concerned with the way in which children felt that other classes and teachers in the school viewed the child's own class. For example, 'Other children make fun of my class', and 'Other children think we're very clever in my class'.

f) Conforming versus non-conforming pupil

These are five statements which cover the range of opposing types of behaviour. For example, 'I dislike children who are noisy in class', and 'When the teacher goes out of the room I play about'.

g) Relationship with Teacher

This scale emphasizes the teacher's degree of concern for the child, as perceived by the child, as opposed to the child's liking for the teacher. For example, 'Teacher thinks I'm a trouble-maker', 'Teacher is interested in me', and 'Teacher is nice to me'.

h) Anxiety in Class

This is a scale of seven items which relate to anxieties, fears and worries in the classroom. For example, 'I would feel afraid if I got my work wrong', and 'Children who can't do their school work feel ashamed'.

i) Social Adjustment

This scale indicates the child's ability to get on well with his classmates. It includes four items. For example, 'I have no one to play with at playtime', and 'I think the other children in my class like me'.

j) Academic self-image

This scale is composed of nine questions reflecting self-image in terms of school work. Some of the items are, 'I'm useless at school work', and 'My teacher thinks I'm clever'.

The scales were developed for use with British pupils aged 9 to 11 years. The authors constructed the scales from statements actually made by children for whom the scales were intended. Each scale was made up of a number of selected items following factor analysis and scalogram analysis (Barker Lunn, 1969).

The scales were found to be positively inter-correlated. Thirty-six of the obtained correlations were significant at the 0.05 level, which indicates a good degree of overlap. The correlations fell neatly into two clusters, scales a-g which deal with attitudes towards aspects of school and school work, and the scales g-j which concern personality and social relations. 'Relationships with teacher' correlated relatively highly with both clusters.

Berk et al. (1970) used the attitude scales on a sample of American school children and found all the scales to be positively intercorrelated. Their correlations were, however, somewhat higher and 42 correlations were significant at the .01 level.

The Children's Attitude Scales were selected for this study to provide some measure of their attitude to the school situation. A study of attitudes was incorporated

because it was believed that children's attitudes to school often reflect their psychological adjustment (Douglas, 1964). It was felt that this questionnaire was particularly suitable for the present sample because the working of the items were designed for 9 to 11 year old British children. It had the added advantage of easy administration on an individual basis without being too time consuming.

Administration. The questionnaire was administered orally to each child. Responses were given verbally and were recorded. Thus, any problems which poor reading ability might create were overcome. It was also felt that fatigue on the child's part could be reduced by oral examination and that a relationship with the child could be maintained.

Scoring. The test booklets were scored by hand according to the standard directions for scoring (Barker Lunn, 1968).

BRISTOL SOCIAL ADJUSTMENT GUIDES

(Stott, 1963)

The Guides were designed by Stott (1963) to offer a method for detecting and diagnosing maladjustment, unsettledness or other emotional handicaps in children from five to 15 years of age. There are separate guides for the Child in School, the Child in Residential Care and the Child in the Family, to be completed by teachers, house parents or social workers as the case may be. The 'Child in School' Guide was the only one used for this study. This Guide has 166 items possibly indicative of

maladjustment and many more items describing normal behaviour in a school environment, e.g.,

Classroom behaviour

Well-behaved/too timid to be naughty/occasionally naughty/has no life in him/constantly needs petty correction/very naughty, difficult to discipline/plausible, sly, will abuse trust, hard to catch/nothing applies.

The teacher underlines those descriptions of behaviour which best characterise the child. The items are transferred to a diagnostic form and are grouped according to the nine syndromes which are recognised by Stott, i.e.:

Unforthcomingness (U)

Withdrawal (W)

Depression (D)

Anxiety or uncertainty about adult interest and affection (XA)

Hostility to adults (HA)

Anxiety for approval of and acceptance by other children (XC)

An attitude of unconcern for adult approval and a 'writing-off' of adults (K)

Hostility to other children (HC)

Restlessness (R)

There are in addition two groupings of miscellaneous symptoms of emotional tension and nervousness. Details of environmental disadvantages, degree of backwardness, sexual maturity and physical condition are also recorded on the diagnostic form.

A comprehensive standardization of the guides on a randomized sample has not been carried out. Stott (1963) argues that it is difficult to find external validation for tests of social adjustment. He suggests that some element of validation is achieved if the results tally with the assessments of teachers or others who know the children well in a day-to-day working relationship. Stott claims a high inter-rater agreement with a retest reliability coefficient of about 0.80. Kellmer Pringle and Fiddes (1970) report a close agreement between observations made during a psychological interview and the teachers' assessments as provided by the Guides on a group of 'thalidomide' children.

Vernon (1969) feels that there is a good deal of subjectivity and halo effect in a typical record as filled in by a teacher. Despite the Guides' shortcomings, Vernon (1969) describes these as a useful compromise between ratings and more detailed short-term behaviour.

Many of the initial criticisms directed at the British Social Adjustment Guides have been remedied by a new edition of the Guides (Stott and Marston, 1970). Unfortunately, the present study was already in progress before the new forms became available.

It was considered important to this study to have a report on the children's social and emotional adjustment other than that which would be afforded by their own self-ratings. Because of its extensive use in surveys and studies in Great Britain it was believed that

reasonable confidence in the Bristol 'Child in School' Guide was justified. The particular advantage for this study was the ease with which the information would be obtained. This was an important factor as some teachers in the special schools would be required to fill out several forms.

Administration. The 'Child in School' Guide was given to the teacher who knew the child best. This created no problems as the majority of children were taken for all subjects by the one teacher.

Scoring. The 'Guides" were scored according to the standardised instructions in the manual. For statistical analysis a point was awarded to each checked item, as recommended by Stott (1963). A summation of symptoms in the form of numerical scores was thus obtained. The total score indicates the degree of maladjustment. Several studies have used such a scoring system (Drillien, 1964; Kellmer Pringle et al., 1966).

The following classification system was used by Drillien and was incorporated:

No. of 'adverse' items underlined	Category
0-4	Stable
5-9	Quasi-stable
10-19	Unsettled
20 or more	Maladjusted

TEACHER ASSESSMENT FORM

This form was constructed by the author in order to gain basic information about the class in which the

physically handicapped child and the normal control attended, and about the child in question.

The questions regarding the class were:-

a) the number of children in the class
b) the sex ratio
c) the average age
d) whether the class was streamed for ability

The questions relating to the child in question were:-

a) place in class
b) school attendance
c) effect of the handicap in the child's work
d) any exceptional ability 'in or out' of school
e) any other factors which might affect school work
f) the parents' interest in the education of the child
g) amount of therapy required during and out of school hours
h) the child's health
i) the teacher's view of the correct type of schooling for the child.

Many of the questions in this assessment form were based on the Teachers' Questionnaire employed by McMichael (1971) and the Teachers' Child Health Form used by Rutter, Tizard and Whitmore (1970).

The questions were all pre-coded offering alternative answers. The teacher was asked to put a tick in one of the boxes indicating the choice of response. Space was left for qualifications wherever appropriate, e.g.,

Has this child any difficulty with hearing?

Yes, marked difficulty.

Yes, moderate difficulty.

Yes, slight difficulty.

No.

If the reply is yes, please describe.

Administration. The teacher Assessment form was given to each class teacher of the physically handicapped child and the control child.

Scoring. The factual information and the coded responses were simply recorded for each child.

UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

PARENT-ATTITUDE-SURVEY (Shoben, 1969)

The Parent Attitude Survey (PAS) is a self-inventory type scale designed by Shoben (1949) to assess parental attitudes (as indicators of parent behaviour) in relation to behaviour and/or personality problems in children. The scale is composed of 85 items, e.g.

> It is sometimes necessary for the parents to break the child's will.
>
> Children should always be loyal to their parents above anyone else.
>
> Parents cannot help it if their children are naughty.
>
> Jealousy among brothers and sisters is a very unhealthy thing.

The items are classified according to the categories, Dominant, Possessive, Ignoring and Miscellaneous.

The Dominant variable consists of items reflecting a tendency on the part of the parent to put the child in a subordinate role, to take the child into account quite fully but always as one who should conform completely to parental wishes under penalty of severe punishment.

The Possessive sub-scale refers to a tendency to "baby" the child, to emphasize unduly the affectional bonds between parent and child to value highly the child'd dependence on the parent, and to restrict the child's activities to those which can be carried on in its own family group.

The Ignoring cluster refers to a tendency on the part of the parent to disregard the child as an individual member of the family, to regard the 'good' child as the one who demands the least parental time, and to disclaim responsibility for the child's behaviour.

The Miscellaneous group refers to items which seemed to defy classification.

The scoring categories are Strongly Agree, Mildly disagree and Strongly disagree.

Shoben (1949) reports the following reliability coefficients as determined by the split-half method : Total Scale 0.95; Dominant 0.91; Possessive 0.90 and Ignoring 0.84.

The reliability has not been checked by the test-retest method. Shoben (1949) argued that parental attitudes may change with time. It is, therefore, difficult to establish whether the obtained correlations reflect inconsistency in the instrument or in the subjects measured.

Shoben (1949) validated his scale by the disparate groups method. The 85 items for inclusion in the instrument were those which discriminated between parents of problem children and those of non-problem children. Responses were weighted differentially on the basis of the data collected from both groups. Supporting evidence of the test's validity has been reported by Trapp and Kausler (1958). However, Gordon (1957) and Leton (1958) both suggest a lack of validity. Gibson (1967) pointed out that most studies have used criterion groups which lent themselves readily to research. Few field studies with normal populations have been reported.

One of the aims of the present study was to examine the child-family relationship in order to establish the role of the school in relation to the family and their relative contributions to the child's social and emotional adjustment. It was mentioned in the Introduction that a study of the child's perception of the child-parent relationship may be related more to a child's adjustment than to an objective measurement of parental attitudes to children. This view is by no means beyond dispute. It was decided that an attempt should be made to assess both possibilities. The child's perception of the child-family relations will be measured by the Bene-Anthony Family Relations Test to be described. An index of the parents' attitudes is most conveniently gained by the administration of a Parent-Attitude Scale. Most studies on the parent-child relationship and its relation to child adjustment have concentrated on the mothers only. Peterson et al. (1961)

demonstrated the need to consider the attitudes of the fathers and their part in the formation of personality in children. Shoben's Parent Attitude Survey is one of the few scales which is designed to measure the attitudes of both parents. Despite the controversial findings on its validity it was judged the most suitable for this study. Alternatives, such as The Porter's scale (1954) was excluded because it does not tap such a wide variety of attitudinal dimensions as does the Shoben's; the Swanson Child-Parent Relationship Scale (1950) was also rejected as it does not discriminate effectively at the ideal end of the test (Serot & Teevan, 1961).

Administration. The questionnaire was posted to all the parents of the children in the study. They were asked to answer the questions and return the 'attitude survey' in an enclosed stamped addressed envelope. Initially it was planned to conduct an open-ended interview with the parents. In addition the PAS were to be sent to the parents in advance of the interview so that they would have time to complete the questionnaire and return it on the day of the interview. Ten sets of parents were seen in this manner. This procedure, however, demanded too much time and it was, therefore, decided to drop the open-ended interview and simply to rely on the information gained from the PAS. Many of the 10 parents at interview expressed strong emotional feelings on the nature of some of the questions. Two couples refused to fill in the questionnaire until an explanation was offered. It was therefore decided to omit

all the particular questions. Fortunately the questions (47, 53, 73 and 83, see appendix) which were dropped belonged to the Miscellaneous group and should, therefore, not interfere with the validity of the test.

Scoring. The PAS was scored by hand according to the standard instructions for scoring in Shoben's (1949) paper.

FAMILY RELATIONS TEST

(Bene and Anthony, 1957)

The family Relations Test is designed to assess the quality and intensity of a child's feelings toward the members of his family and his perception of the family's attitudes toward him. It is commonly thought of as a projective test, but as Semeonoff (1973) has pointed out it is correctly classified in the Mental Measurements Yearbook as 'nonprojective'.

The test materials consist of 20 cardboard figures representing people of differing ages from babyhood to old age. These are relatively neutral and allow the child to select figures representing each member of his family including himself. There is also a figure called 'Nobody'. Each figure is attached to a small red cardboard box with a slit in the top. There are a number of small cards, on each of which a statement is printed. In the edition for children eight years old and above there are 86 test items. These items indicate positive or negative feelings coming from the children or going towards the child, e.g.

This person in the family is very kind-hearted (mild positive feeling <u>coming from</u> the child).

Sometimes I hate this person in the family (strong negative feeling coming from the child).

This person in the family likes to kiss me (strong positive feeling going towards the child).

This person in the family makes me feel silly (strong negative feelings going towards the child).

The child chooses his own family from the 21 figures. He is then told that each of the cards contain a message and that his task is to 'post' each card 'into the person' whom the message it conveys suits best. 'Nobody' is used for items that are not felt to apply to anyone in the family.

Comparative and normative data for the Family Relations test are relatively few. Bene and Anthony (1957) provided figures for a clinical group. Frost (1969) has published normative data for a group of 190 eleven-year old school children.

The few investigations of the reliability of the test have been encouraging. Odd-even reliabilities reported by Anthony and Bene (1957) ranged from 0.68 to 0.90. Kauffman (1968) found test/retest reliabilities in the 0.70's and 0.80's for a sample of 41 remedial readers. In 1972, Kauffman et al. reported test/retest reliabilities for a sample of 46 retarded readers to be in the 0.70"s, 0.80's and 0.90's for the major response classifications. The lowest reliabilities were obtained for the responses involving parental overprotection or overindulgence, relations which Kauffman believes are probably difficult for children to conceptualize.

Bene and Anthony (1957) provided validity data which involved a) comparison of test results with extensive case history material; b) comparison of mutual feelings reported by sets of siblings, and c) congruence of test data with predictions made independently from psychiatric diagnoses. Kauffman (1970) criticized this work suggesting that the construct validation was of questionable methodology. He points out that if one asserts that it is the child's perception of his family relationship which is the most important, it is then inconsistent to validate the test results against independent objective criteria or reports from individuals other than the child. Kauffman (1970), however, quotes several published studies which have indicated that the Family Relations Test is useful in delineating aspects of intrafamily dynamics among various clinical groups as well as in the detection of significant differences in the perceptions of disturbed and normal children. Bene and Anthony (1957) believe that it is the child's "psychiatric reality", his own idiosyncratic concept of his emotional environment, that has operational value and is thus likely to be more relevant to the aetiology of his symptoms than the "objective reality" assessed through careful social enquiry. This claim has received empirical support from other research (Ausubel et al, 1954; Burchinal, 1958). Further evidence of the predictive validity of the Bene-Anthony Family Relations Test are to be found in Frost (1969) and Van Slyke & Leton (1965).

In conclusion, the information available on the validity and reliability of the test suggested that the reasonable confidence in the Family Relations Test justified its inclusion in the present study. A study of the child-family relationship was believed to be pertinent in order to establish the roles of the school and the family and their relative contribution to the child's social and emotional adjustment.

Other factors made this test particularly suitable for the study: a) it is simple and attractive to use whilst assessing an "emotionally loaded" area, b) the questions are phrased in children's language and represent common personal and family experiences, c) it takes only 20 to 25 minutes to administer, and d) it is objectively scored and the results are conducive to statistical analysis.

Administration. The test was administered individually After the child had decided on the figures which were to represent his family, the statements were read aloud by the examiner. The card was then given to the child to read if he/she so wished before it was 'posted'. If the child was not physically able to 'deposit' the card himself, he just indicated his response and the card was posted by the examiner.

Scoring. The test was scored by hand according to the standard directions for scoring in the manual.

DEGREE OF PHYSICAL INCAPACITY

There are many practical and theoretical problems

in the classification of the degree of handicap (Naughton, 1975).

It was, however, considered important to assess the degree of physical incapacity in order that a comparison of the severity and distribution of the handicapping conditions within the various types of school might be made. Also the success or failure of a child in the different aspects of school life could be assessed in the light of severity of handicap.

Kershaw (1961) suggested that handicap should be measured in terms of function rather than of anatomy and physiology. It was considered that it would be best to adopt such a system in this study: it would facilitate comparison of the degree of handicap in children with very different disabilities, and it would also allow a profile of the major functional impairments to be constructed for each child.

Of the relevant classifications available, the Lindon (1963) Pultibec system was excluded because it was too time consuming. It was also considered that the items on general health, intelligence and personality were of no advantage.

The system chosen was based on Katz's assessment of handicap (1953). It involved six main categories: vision, hearing, speech, sitting balance, arm and hand use, and walking. For the purpose of this study another factor was added, namely "toileting".

Each child's functional capacities for each of these seven categories were rated by the child's teacher on a 4 point scale, i.e.,

1 indicating no handicap

2 " slight handicap

3 " moderate handicap

4 " severe handicap

The scores for each of the seven functions were summed and a composite quantitative score calculated (minimum '7' to maximum '28'). This score was taken as the index of severity of handicap. In addition the major functional effect of handicap was recorded by considering the function which was most impaired.

The children were also rated on the 1-4 scale used by Rutter et al. (1970b) to assess the degree of handicap The criteria for rating were as follows:

1. None: No handicap.
2. Slight: Inability to perform strenuous or stressful activities such as sport, long hikes or physical education.
3. Moderate: Inability to perform ordinary activities, restrictions of such activities or difficulty or discomfort in their performance (but to an extent less marked than that covered by the severe rating). This rating was used where there was a marked limp, where crutches were used or where there was only a limited ability to walk distances. It was also used

where the child was slow in his self-care but was independent or, at most, needed minor help with daily activities such as washing his back or brushing his hair.

4. Severe: Substantial help needed with daily activities such as dressing, undressing, washing, bathing, and feeding. The rating was also applicable where the child required special transport or was unable to go out unaccompanied.

These ratings were compared with the quantitative scores of the degree of physical incapacity (Katz's system). The following categories arose:-

No handicap = 7

Mild " = 8 to 10

Moderate " = 11 to 12

Severe " = 13+

NEUROLOGICAL INVOLVEMENT

The presence or absence of neurological abnormalities was independently assessed by neurological paediatricians on the staff of the Royal Hospital for Sick Children (Ingram, 1970; Naughton, 1970; Drummond, 1970; Duthie, 1973).*

VISUAL IMPACT OF HANDICAP

An attempt to assess the degree of visibility of handicap was made. The hypothesis was that the children's social and emotional adjustment and peoples reaction to them could be correlated with the degree of visibility of handicap.

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* The term neurological abnormality refers to upper central nervous system impairment.

The degree of visibility of handicap of each child with a physical handicap was rated on a 4 point scale. No reliability for the measure of the degree of visibility of handicap can be claimed. Each child was rated by the author.

Mild = 1

Moderate = 2

Severe = 3

Very severe = 4

The criteria for rating were as follows:-

Mild: There was a slight limp or surgical boots or other minor aids were worn. There was a slight disability of hands or arms.

Moderate: There was a marked limp or the use of crutches. There was a marked disability of arms or use of arm prothesis.

Severe: There was paralysis of the lower limbs which necessitated a wheelchair. There is upper arm phocomelia without prosthetic treatment.

Very Severe: There was spastic tetraplegia or upper and lower limb phocomelia without prosthetic treatment necessitating special transport e.g. a wheelchair.

SOCIAL CLASS

In the present study the father's occupation was taken as the index of the child's social background. The Registrar General's classification (1960) was used to categorize the occupations into the following six classes:-

I	= Professional occupation
II	= Minor professional/Managerial occupation
III non manual	= Clerical/Supervisory occupation
III manual	= Skilled occupation
IV	= Semi-skilled occupation
V	= Unskilled occupation

In this study Classes I and II were combined for statistical purposes as were classes IV and V when considered necessary.

ENVIRONMENTAL HOME CIRCUMSTANCES

It was thought relevant to the study to attempt an assessment of the environmental home circumstances of the children. It has been suggested (Pringle, 1964) that the extent to which a handicapped child is able to fulfil his potential is affected by environmental conditions and more especially by parental attitudes. Parental attitudes will be measured by Shoben's (1949) Parent-Attitude-Survey which has been already described.

The environmental home circumstances for each child were rated on a 4 point scale, i.e.

Favourable	= 1
Average	= 2
Unfavourable	= 3
Very Unfavourable	= 4

A rating was decided as a result of an interview with both the child's class teacher and the head-teacher of the school. This interview was necessary for both the

teacher and the headteacher to comment freely on a) the child's behaviour in school and b) the child's family circumstances.

The criteria for rating were as follows:

Favourable = A good home with a stimulating environment. The parents are committed to and interested in the child.

Average = Adequate care and interest in the child.

Unfavourable = Poor marital relationship. Low standards of care and interest in the child.

Very Unfavourable = Poor marital relationship. An unstable parent, e.g. alcoholism, psychiatric illness. The child is neglected. Outside intervention is necessary - intermittent periods in 'care'.

No validity for this procedure can be claimed. A personal visit to the home of each child had been intended but after 10 such visits the practice was discontinued as it proved too time-consuming.

DATA COLLECTION PROCEDURE

The Children

For each physically handicapped (P.H.) child in the sample, letters were sent to the parents, the local Authority of Education, the local Authority of Health and the headteacher of the child's school. It was pointed out

that the true nature of the class visits would be disguised i.e. the children, including the handicapped member, would have no inkling that the true purpose of the visit was the assessment of the physically handicapped child.(see copies of letters sent in the Appendix). No child was seen until consent from each of the above sources had been given. One handicapped child on the 'records' was not included in the survey because of refusal of consent from the parents. They themselves were willing to co-operate but were afraid that the true nature of the study might be revealed to the child.

For each control child a letter was sent to the parents only after the child had been matched as a suitable control, i.e. after assessment of his intellectual level. This letter merely notified the parents of the intended survey and not of its true purpose i.e. no mention was made of physical handicap. It was pointed out that in the event of their objecting they could notify the school and the child would then be withdrawn from the study (see appendix for a copy of the letter). Only one parent objected, but later consented after personal contact was established. The parents of the control children who were attending boarding school were not notified of the study, full responsibility being accepted by the schools. As many of the parents lived abroad and as boarding school children of correct criterion were difficult to locate, it was thought unadvisable to risk wastage.

Physically handicapped children at Ordinary Day schools (OD) and the controls for O.D. and Special Day schools (SD)

The author when introduced to the class by the teacher explained that several schools in Edinburgh and in the adjacent counties were visited to study the children so as to learn more about their feelings and behaviour at different ages. It was explained that everyone in the class would be involved for part of the study and that then some children would be required to help further. This explanation was offered in case some of the children pre-selected as possible controls might later not be found suitable.

The social administration test was then administered to the whole class. This usually resulted in a number of volunteers clamouring for further study. It was decided that in order to appear fair, the class register would be used for selection. The author with eyes closed appeared to pick out at random about four or five names including the P.H. child. The name of each child selected was usually greeted with cheers, disappointment being expressed by those not chosen. It should be emphasised that the children so 'selected' had been decided upon beforehand with careful discussion with the class teacher. He/she had been asked to select children who might be suitable to act as controls for the P.H. child in the class and a further two or three as controls for a P.H. child in a Special School. The class teacher was supplied with details of age, sex, social class, family size and I.Q. of

the P.H. child at Special Day school.

The children chosen in this manner including the P.H. child were interviewed individually in a private room. The Raven's Progressive Matrices (either Set A, Ab, C or A-E) and the Crichton or the Mill Hill Vocabulary Scale was administered. The Raven's test was scored immediately upon completion and if the normal children fitted the other control criteria for either the P.H. child in the same class or for one in a special school they were selected to complete the remainder of the study. Wherever there were P.H. children who resided rurally and attended a rural Special Day School, controls for these were sought from the ordinary schools in the locality.

When it was decided which of the children would participate, a further two individual sessions were spent with each child to complete the test profile. In rural schools, the child was generally seen once in the morning and once in the afternoon. (In Edinburgh schools, however, the sessions were often held on different days).

The order of test administration was as follows

Session I

The California Test of Personality

Children's Attitude Scales

Vernon's Graded Word Reading Test.

Session II

The Junior Eysenck Personality Inventory

WISC Arithmetic Sub-Scale

The Family Relations Test.

Physically handicapped children at Special Day and Special Residential schools.

The same explanation of the nature of the study was given to the classes involved in the Special Day and Special Residential schools. All the classes involving the children chosen for the study were given the modified version of the social discrimination test. Each child listed was then seen individually in a private room and the tests for intellectual ability (both verbal and non-verbal) were administered. If the child was not of normal intelligence or did not meet the other criteria specified he/she was excluded from the study. Five children from a Special Day and one from a Special Residential were excluded on these grounds, three because of low IQ and three because the type of handicap did not fit the required criteria.

The children at the Special Day and Special Residential schools were invariably more handicapped than were those at Ordinary Day schools. For these reasons it was considered advisable in order to prevent fatigue that they should be given three short sessions instead of the customary two. The procedure for administration was as follows:

Session I

The California Test of Personality

Vernon's Graded Word Reading Test

Session II

Children's Attitude Scales

WISC Arithmetic Sub-Scale

Session III

The Junior Eysenck Personality Inventory

The Family Relations Test.

Generally the sessions were conducted on different days. The children at special day schools were always interviewed during school hours. However, the majority of the children attending residential special schools, were seen after school hours, a preference which was expressed by the school management.

Controls for P.H. at Special Residential schools

The schools which agreed to co-operate were given details of the physically handicapped children for whom controls were sought. The headteachers or the class-teachers involved listed children whom they considered suitable as controls. These children were interviewed individually, and the Raven's Matrices as well as the Crichton or Mill Hill Vocabulary scales administered. They were given the same explanation of the nature of the study as were the children in the other groups. According to their 'IQ' level the children who best matched the criteria for selection were chosen to complete the other parts of the study. The majority of the boarding school controls, was interviewed after school hours. Each class to which the control children belonged was given the social discrimination test.

Teachers and Headteachers

On the first visit to a school the teachers responsible for the children in the survey were asked to

complete the Bristol Social Adjustment Guides and the Teacher Assessment Form. On the final visit to the school these forms were collected. The teachers and the head-teachers were requested to talk freely about each child in question. The headteacher was consulted for basic information on the child, i.e., the date of entry to the school and any record of previous schools attended. As noted previously, an overall view of the child's behaviour and his environmental home circumstances was also sought.

Parents

Data on the attitudes of the parents to child-rearing were collected by mailing the Shoben's Parent-Attitude-Survey to them with a covering letter (see Appendix). Questionnaires were not sent to the parents of boarding school controls. As these parents had not been notified of the study for reasons specified earlier, it was considered impertinent to seek their cooperation at such a late stage.

If a reply was not forthcoming after six weeks a reminder was sent whenever this seemed feasible. Reminders were not sent out if the latter was returned by the post office and further enquiries had failed to disclose a new address (four instances), the school or other sources claimed that any renewed effort would be pointless owing either to the nature of the parents or to illiteracy. There were nine such cases in the physically handicapped groups. In one instance of 'illiteracy' the author called on the parents and obtained the information verbally.

Table 3.3 shows the response rate for the parents of the children in the different types of school. It should be noted that questionnaires were not sent to a parent who was no longer in contact with the child owing to divorce, separation or desertion or to current imprisonment. In some cases a parent was dead or psychiatrically ill. Two children in the sample died and their parents were not asked to fill in the questionnaires.

Table 3.3 The number of questionnaires mailed to the parents and the response rate.

	No. Mailed	No. of Responses	%
MOTHERS			
PH at O.D.	36	24	66.67
PH at S.D.	36	25	69.44
PH at S.R.	34	18	52.94
Controls for O.D.	38	20	52.63
Controls for S.D.	37	21	56.76
FATHERS			
PH at O.D.	36	24	66.67
PH at S.D.	32	20	62.50
PH at S.R.	33	17	51.52
Controls for O.D.	38	20	52.63
Controls for S.D.	35	19	55.29

Statistical Methods

The following statistical techniques were used in the analysis of the data:

Analysis of variance and covariance

One-way analysis of variance was applied to the data when it was necessary to compare separately the groups of handicapped children and control children. As inferences were to be made only to those categories examined in the present study (i.e. types of school attended) the fixed-effects model was chosen. The Scheffé test was performed for post hoc comparisons when the value of F reached statistical significance (the alpha level was set at .05 significance level). This posteriori contrast test was chosen because it is one of the more rigorous methods (Winer, 1970). It was considered preferable for this study to limit the probability of making type I rather than type II error.

Two-way analysis of variance was applied to the data when there was interest in the simultaneous effects of two variables.

Analysis of covariance was performed on the scores when it was necessary to remove extraneous variation from the dependent variable.

Correlation analyses

Correlation analyses were used to examine the association between variables, using the Pearson product-moment correlation. It has been argued that the Pearson correlation coefficient may be used even if the data satisfy only the assumptions of ordinal-level measurement (Hays, 1963). Thus it was considered appropriate to apply the statistical technique to some of the demographic and background variables.

Chi-square

Chi-square was used as a test of significance when the data were expressed in frequencies. For 2x2 tables, Fisher's exact test was applied when there were fewer than 21 cases. Yates' corrected chi-square was applied for all other 2x2 tables.

T-test

Independent t-tests of significance were applied to the data in order to discover and evaluate differences between effects of type of school attended (day and residential) for control children.*

*For statistical purposes the two groups of children attending day school were combined. By application of a test of homogeneity of variance (Bartlett-Box) it was established that the two groups were part of the same population.

Homogeneity of variance was tested by using the F-test which was computed as follows $F = \frac{\text{larger } s^2}{\text{smaller } s^2}$. When the F was not significant, alpha level being set at .05, the variances were pooled. On the other hand, when F was significant at the 5 percent level, *t* was based on a separate variance estimate.

Paired t-tests were applied to correlated data, that is, data which consisted of two sets of measurements, either on the same individuals or on matched samples.

The probability given for all the statistical tests was two-tailed. The majority of the statistical analyses for the present thesis were performed on the computer using the Statistical Package for the Social Sciences, versions 5.8 to 6.02 (Nie *et al.*, 1975). As this package was unable to compute t-tests on matched samples, a special program had to be written for such analyses (Murphy, 1976).

III RESULTS

The results section consists of six chapters (Chapters 4 to 11). Chapter 4 examines the sample characteristics of the children; Chapter 5, the social relationships of children (the physically handicapped and their controls at ordinary day schools only); Chapter 6, the children's own assessments of their social and emotional adjustment; Chapter 7, the teachers' assessments of children's social adjustment in school; Chapter 8, the children's attitudes to school; Chapter 9, the children's attainment in reading and arithmetic; Chapter 10, maternal and paternal attitudes to children; and Chapter 11, the children's perceptions of their family relationships.

The format of data presentation is the same for each individual chapter. Firstly, the effect of school on the performance of handicapped children is explored. Then the influence of other factors on their performance is considered. These other factors are: visibility and severity of handicap, major functional effect of disability, the nature of disability and the presence or absence of neurological abnormalities. Additional factors which are examined are: age, sex, family size, ordinal position, social class, environmental home circumstances, verbal and non-verbal intelligence and finally absence from school. Secondly, the effect of school on the performance of normal

children is evaluated. This is followed by an analysis of the relationships of their performance to the factors previously mentioned. Finally, a comparison is made of physically handicapped children in the different schools with their controls.

A summary of statistically significant results (Chapter 12) is provided at the end of the results section. This summary has a dual purpose. Firstly, reference can be made to it for a summary of results from the individual chapters. Secondly, a composite picture of all the results is provided.

It should be pointed out that detailed reference is sometimes made in the result chapters of findings which are not statistically significant. This is done because the pattern is considered to be important both in the light of earlier research and/or as providing information for future research. Dale (1962) has commented "in work which produces a patterned result there is a tendency for us to ignore the importance of the pattern when we are considering questions of statistical significance" (p.84). "We need to bear in mind", he states, "that although we have by consent drawn an artificial line between 'significant' and'non-significant' there is in actuality no such barrier, but a gradual transition" (p.84).

CHAPTER 4

Sample Characteristics

This chapter examines the characteristics of the sample. The purpose of the analysis is to establish the extent to which the groups of handicapped and control children are similar. A comparison is first made of the three groups of handicapped children. This is followed by a comparison of the control groups. Finally there is a comparative assessment of each group of physically handicapped children and their controls.

1. The Sample

The sample of 114 physically handicapped (PH) children in the present study consisted of 38 children attending each of the different types of schooling, ordinary day (OD), special day (SD), and special residential (SR).

The 114 normal children comprised 76 children from ordinary day schools, 38 of whom were matched with the O.D. group and the other 38 with the S.D. group. Thirty eight children were selected from normal boarding schools as controls for the S.R. group. For the sake of brevity the controls for the O.D. groups are referred to as the O.D.C. group and the controls for S.D. and S.R. children as the S.D.C. and S.R.C. groups

II. The schools for disabled children

Table 4.1 shows the number, type and location of the schools containing the physically handicapped children visited for the purpose of the present study.

Table 4.1 Number, type and location of schools for the three groups of physically handicapped children.

Type & Location of schools		Ordinary Day (OD)	Special Day (SD)	Special Residential (SR)	TOTAL
Local Authority	Edinburgh City	18	2	0	20
	Scottish* Counties	16	2	0	18
Private	Edinburgh City	2	1	3	6
	Scottish* Counties	0	0	1	1
Total No. of schools		36	5	4	45

A. Ordinary day

All the ordinary day schools were characteristic of the Scottish state primary schools (Hunter, 1968; Bell et al., 1973) with the exception of three schools. One was a combined state primary and secondary school. Two were private fee-paying single-sex schools (one male and one female). The physically handicapped children in all the ordinary schools were fully integrated in the regular classrooms. Four children were in streamed classes

* The counties in which schools were located were: Fife, Midlothian, Lanark, Peebleshire, East Lothian, Selkirk and Stirling.

B. Special day

The special schools were all local authority with the exception of one school, which was both day and residential. This school was managed by a voluntary organisation and contained children suffering from one particular type of physical handicap. Two of the local authority schools were restricted to physically handicapped pupils (including 'delicate' pupils) of normal intelligence. The other two local authority schools were 'multi-handicap' schools. The six children seen from these two schools were, however, streamed according to type of medical condition and intellectual ability.

C. Special residential

The special residential schools were all 'full-time' residential special schools. They were all managed by a voluntary organisation or a society. The children were in classes streamed for scholastic ability.

III. The schools for control children.

Table 4.2 shows the number, type and location of the schools visited and which were attended by the control group of children.

A. Ordinary day

The ordinary day schools visited were those previously mentioned in regard to the physically handicapped children.

B. Residential schools

The residential schools with the exception of one, were fee-paying and single-sex (2 male and 3 female). This

Table 4.2 Number, type and location of schools for the control children.

		Ordinary Day	Boarding	TOTAL
Local Authority	Edinburgh City	18	1	19
	Scottish* Counties	16	0	16
Private	Edinburgh City	2	4	6
	Scottish* Counties	0	1	1
Total No. of schools		36	6	42

one local authority school gave preference to children from families in which one parent was dead. Two of the six boarding establishments were preparatory schools. Four schools provided both primary and secondary education, with the exception of the boys preparatory school. The boarding schools visited also catered for day pupils. Five control children attending boarding schools were streamed on 'scholastic ability'.

IV. Chronological Ages

The ages of the physically handicapped children in the different types of schools are shown in Table 4.3. The difference between the groups were not significant ($x^2 = 0.632$, df., 4).

* See footnote page 127.

Table 4.3 Distribution of ages and mean age for the three groups of physically handicapped children.

	PH Children age in years							
	9		10		11			
Group	No.	%	No.	%	No.	%	Total Number	Mean age in months
O.D.	12	31.6	12	31.6	14	36.8	38	126.8
S.D.	13	34.2	11	28.9	14	26.8	38	124.7
S.R.	12	31.6	14	36.8	12	31.6	38	125.4
Total No. of Children	37	32.5	37	32.5	40	35.1	114	125.6

Table 4.4 shows the ages of the different control groups.

Table 4.4 Distribution of ages and mean age for the three groups of control children.

	Age in years							
	9		10		11			
Group	No.	%	No.	%	No.	%	Total Number	Mean age in months
O.D.C.	13	34.2	11	28.9	14	36.8	38	126.5
S.D.C.	12	31.6	11	28.9	15	39.5	38	127.4
S.R.C.	12	31.6	10	26.3	16	42.1	38	128.2
Total No. of Children	37	32.5	32	28.1	45	39.5	114	127.4

The chronological ages were also not significantly different for the three control groups (x^2 = 0.250, df. 4), nor were there significant differences when the ages of the children in each physically handicapped group were compared with those of the corresponding control group.

There were moreover no differences of statistical significance between the ages of boys and girls within both the physically handicapped groups and the control groups.

V. Sex ratio.

There were 17 girls and 21 boys in each group of handicapped and of control children.

VI. Family Size.

The mean size of the sibship for each of the physically handicapped groups, including the subject himself was 2.89 for the O.D. group, 2.89 for the S.D. group and 3.0 for the S.R. group. These differences were not significant (F = 0.056, df. 2.111). The distribution of the sibship sizes for the physically handicapped children in the different types of schools is shown in Table 4.5.

The mean sibship size for the control groups O.D.C, S.D.C. and S.R.C. was 3.34, 2.81 and 2.73 respectively. These differences were also not statistically significant (F = 2.72, df, 2.111). Table 4.6 shows the distribution of the sibship sizes for the control groups.

The F ratios which were analysed for each physically handicapped group and its control group were nonsignificant.

Table 4.5 Size of sibship (including the PH child) for the three PH groups.

Sibship size	O.D.		S.D.		S.R.		Total	
	No.	%	No.	%	No.	%	No.	%
1 (only child)	3	7.9	4	10.5	8	21.1	15	13.2
2	15	39.5	17	44.7	8	21.1	40	35.1
3	8	21.1	9	23.7	10	26.3	27	27.7
4	9	23.7	3	7.9	5	13.2	17	14.9
5	2	5.3	2	5.3	3	7.9	7	6.1
6	0	0.0	1	2.6	3	7.9	4	3.5
7	1	2.6	1	2.6	1	2.6	3	2.6
10	0	0.0	1	2.6	0	0.0	1	.9
Total number of children	38		38		38		114	

Table 4.6 Sibship size (including the control) for the three control groups

Sibship size	O.D.		S.D.		S.R.		Total	
	No.	%	No.	%	No.	%	No.	%
1 (only child)	2	5.3	3	7.9	3	7.9	8	7.0
2	11	28.9	12	31.6	12	31.6	35	30.7
3	11	28.9	15	39.5	18	47.4	44	38.6
4	7	18.4	6	15.8	3	7.9	16	14.0
5	2	5.3	1	2.6	1	2.6	4	3.5
6	3	7.9	1	2.6	1	2.6	5	4.4
7	2	5.3	0	0.0	0	0.0	2	1.8
Total number of children	38		38		38		114	

VII. Ordinal position in family

Table 4.7 gives the position in the family for the three PH groups. The mean ordinal positions of the children in their families were as follows: 1.92 for O.D., 2.16 for S.D. and 1.76 for S.R. These differences were not significant (F = 1.08, df, 2.111).

Table 4.7 Position in family for the three PH groups

Family Position	O.D.		S.D.		S.R.		Total	
	No.	%	No.	%	No.	%	No.	%
1	17	44.7	14	36.8	20	52.6	51	44.7
2	12	31.6	14	36.8	10	26.3	36	31.6
3	6	15.8	6	15.8	6	15.8	18	15.8
4	1	2.6	1	2.6	1	2.6	3	2.6
5	2	5.3	1	2.6	1	2.6	4	3.5
6	0	0.0	1	2.6	0	0.0	1	.9
7	0	0.0	1	2.6	0	0.0	1	.9
Total number of children	38		38		38		114	

The control groups O.D.C., S.D.C., S.R.C. had the following mean ordinal positions: 2.21, 1.92 and 2.08 (Table 4.8). The means were not significantly different, (F = 0.57, df, 2.111).

The computed F ratios between each PH group and its control group yielded no significant differences between any of the sets.

Table 4.8 Position in family for the three control groups.

Family Position	O.D.C.		S.D.C.		S.R.C.		Total	
	No.	%	No.	%	No.	%	No.	%
1	14	36.8	16	42.1	13	34.2	43	37.7
2	14	36.8	13	34.2	14	36.8	41	36.0
3	3	7.9	6	15.8	7	18.4	16	14.0
4	5	13.2	2	5.3	3	7.9	10	8.8
5	0	0.0	1	2.6	1	2.6	2	1.8
6	1	2.6	0	0.0	0	0.0	1	.9
7	1	2.6	0	0.0	0	0.0	1	.9
Total number of children	38		38		38		114	

VIII. Social class

The composition of the socio-economic background for the PH children in the different types of school is shown in Table 4.9.

There were no statistically significant differences in the distribution of social class for the PH groups ($x^2 = 3.25$, df = 6). Because of the small numbers involved classes I and II, and IV and V were combined.

The composition of social class for the control groups is shown in Table 4.10. In this case the difference between the groups were significant when class I and II, and IV and V were combined ($x^2 = 37.91$, df 6, $p < .001$).

Table 4.9 Social class in the three PH groups

Social class	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
I	3	7.9	3	7.9	2	5.3	8	7.10
II	8	21.1	6	15.8	6	15.8	20	17.5
III (Non-manual)	8	21.1	6	15.8	4	10.5	18	15.8
III (Manual)	9	23.7	13	34.2	14	36.8	36	31.6
IV	7	18.4	7	18.4	8	21.1	22	19.3
V	3	7.9	3	7.9	4	10.5	10	8.8
Total number of children	38		38		38		114	

Table 4.10 Social class in three control groups

Social class	O.D.C.		S.D.C.		S.R.C.		Total group	
	No.	%	No.	%	No.	%	No.	%
I	3	7.9	4	10.5	7	18.4	14	12.3
II	8	21.1	6	15.8	25	65.8	39	34.2
III (Non-manual)	8	21.1	7	18.4	6	15.8	21	18.4
III (Manual)	11	28.9	12	31.6	0	0.0	23	20.2
IV	6	15.8	6	15.8	0	0.0	12	10.5
V	2	5.3	3	7.9	0	0.0	5	4.4
Total number of children	38		38		38		114	

In a comparison of the social class of children in the physically handicapped group with that of their controls there were no significant differences in the two sets at day school. However the normal boarding school children (S.R.C.) differed significantly from the PH at special residential schools, (x^2 = 34.8, df 3, $p < .001$). It is seen in table 4.10 that classes I and II were over-represented in the S.R.C. group.

IX. Environmental home circumstances

The environmental home circumstances of the physically handicapped children are classified in table 4.11. Combining categories I and II (favourable) and III and IV (unfavourable) produced no significant differences in the case of the PH children in the different types of schools (x^2 = 0.55, df 2).

Table 4.12 illustrates the composition of the environmental home circumstances for the normal groups. The differences between the groups were found to be statistically significant at the 0.001 level (x^2 = 21.18, df 2). The S.R. controls had better environmental home circumstances than the control groups O.D.C. and S.D.C.

When the environmental home circumstances of the physically handicapped groups were compared with their respective control groups none of the differences between the three sets of children was statistically significant.

Table 4.11 Environmental home circumstances for the three groups of PH children.

Home circumstances	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
I Favourable	27	71.7	25	65.8	24	63.2	76	66.7
II Average	3	7.9	4	10.5	3	7.9	10	8.8
III Unfavourable	6	15.8	7	18.4	8	21.1	21	18.4
IV Very Unfavourable	2	5.3	2	5.3	3	7.9	7	6.1
Total number of children	38		38		38		114	

Table 4.12 Environmental home circumstances for the three control groups.

Home circumstances	O.D.C.		S.D.C.		S.R.C.		Total group	
	No.	%	No.	%	No.	%	No.	%
I Favourable	26	68.4	21	55.3	38	100.0	85	74.6
II Average	9	23.7	12	31.6	0	0.0	21	18.4
III Unfavourable	2	5.3	3	7.9	0	0.0	5	4.4
IV Very Unfavourable	1	2.6	2	5.3	0	0.0	3	2.6
Total number of children	38		38		38		114	

X. a. Intellectual ability (non-verbal)

Table 4.13 shows the distribution of the non-verbal intelligence grades* among the different groups for the 114 physically handicapped children tested.

Table 4.13 Distribution of grades achieved on Raven's Progressive Matrices (Sets A, Ab, C and A, B, C, D, & E) by the three PH groups.

Intellectual grades*		O.D.		S.D.		S.R.		Total group	
		No.	%	No.	%	No.	%	No.	%
Definitely above average	I	4	10.5	5	13.2	5	13.2	14	12.3
	II+	3	7.9	4	10.5	2	5.3	9	7.9
	II	8	21.1	6	15.8	6	15.8	20	17.5
Average	III+	6	15.8	4	10.5	8	21.1	18	15.8
	III	2	5.3	7	18.4	2	5.3	11	9.6
	III-	7	18.4	5	13.2	9	23.7	22	19.3
Definitely below average	IV	3	7.9	2	5.3	4	10.5	9	7.9
	IV-	5	13.2	5	13.2	2	5.3	11	9.6
Total number of children		38		38		38		114	

When a chi-square test was applied to Table 4.13 a nonsignificant value was obtained ($x^2 = 0.99$, df 4). Thus there were no differences in non-verbal intelligence among the three physically handicapped groups.

* A detailed interpretation of the different grades is given in the Appendix, page 445.

The distribution of non-verbal intelligence grades among the control groups is seen in Table 4.14.

Table 4.14 Distribution of grades obtained on Raven's Progressive Matrices (Sets A, Ab, C and A-E) by the three control groups.

Intellectual grades		O.D.C.		S.D.C.		S.R.C.		Total group	
		No.	%	No.	%	No.	%	No.	%
Definitely above average	I	4	10.5	5	13.2	6	15.8	15	13.2
	II+	5	13.2	6	15.8	5	13.2	16	14.0
	II	6	15.8	4	10.5	7	18.4	17	14.9
Average	III+	10	23.3	9	23.7	15	39.5	34	29.8
	III	2	5.3	2	5.3	1	2.6	5	4.4
	III-	3	7.9	5	13.2	1	2.6	9	7.9
Definitely below average	IV	5	13.2	6	15.8	1	2.6	12	10.5
	IV-	3	7.9	1	2.6	2	5.3	6	5.3
Total number of children		38		38		38		114	

It is seen that Grades III to IV- are under-represented in the case of the S.R.C. group. However, this did not emerge in the statistical analysis where no significant differences were found in the composition of intellectual ability for the three control groups (x^2 = 2.83, df 4).

The mean standardized scores of the Raven's Matrices for the physically handicapped and the control

groups and the F ratios of the differences between each PH group and its respective control group are shown in Table 4.15 (testing for homogeneity of variance (Bartlett-Box) between the three sets of children revealed no significant differences). From Table 4.15 it can be seen, however, that the control children at residential schools are significantly more able intellectually (non-verbal scores) than the physically handicapped children at special residential schools.

Table 4.15 Mean standardized scores on the Raven's Matrices (Sets A, Ab, C, and A-E) for all groups and F ratios for each PH group and its respective control group.

Non-verbal Intelligence

Group	Group Size	Mean Standardized score	SD	F. Ratio	df
O.D.	38	103.5	15.0	.25	1,74
O.D.C.	38	105.2	14.5		
S.D.	38	104.6	14.5	.37	1,74
S.D.C.	38	106.6	13.7		
S.R.	38	104.0	13.5	4.88*	1,74
S.R.C.	38	110.5	12.2		

*p < .05

* A detailed interpretation of the different grades is given in the Appendix.

X. b. Intellectual ability (verbal)

Table 4.16 shows the distribution of the verbal intelligence grades among the different groups of PH children. No significant differences were found in the verbal intelligences of the children in the different types of schools (x^2 = 5.13, df 4). Analysis of variance on the mean scores confirmed this finding (F=2.64, df 2,111).

Table 4.16 Distribution of grades obtained on Vocabulary Scales (Crichton and Mill Hill) for the three PH groups.

Verbal ability grades*		Groups O.D. No.	O.D. %	S.D. No.	S.D. %	S.R. No.	S.R. %	Total group No.	Total group %
Definitely above average	I	7	18.4	2	5.3	0	0.0	9	7.9
	II+	2	5.3	3	7.9	2	5.3	7	6.1
	II	9	23.7	6	15.8	9	23.7	24	21.1
Average	III+	4	10.5	5	13.2	7	18.4	16	14.0
	III	1	2.6	2	5.3	1	2.6	4	3.5
	III-	6	15.8	9	23.7	4	10.5	19	16.7
Definitely below average	IV	5	13.2	8	21.1	7	18.4	20	17.5
	IV-	2	5.3	3	7.9	6	15.8	11	9.6
	V	2	5.3	0	0.0	2	5.3	4	3.5
Total number of children		38		38		38		114	

* A detailed interpretation of the different grades is given in the Appendix.

The composition of verbal intelligence grades for the different control groups is shown in table 4.17. The distribution of those children who were definitely above average, average and definitely below average among the control groups was statistically significant (x^2 = 10.00, df 4, $p < .05$). No statistical differences were detected between the two control groups at day schools. However, combining the O.D.C. and S.D.C. groups and comparing them with the boarding controls, revealed statistically significant differences in the distribution of their scores, the normal children at boarding schools being verbally more skilled than the children at day schools, (x^2 = 9.45, df 2, $p < .01$).

Table 4.17 Distribution of grades obtained on the Crichton and Mill Hill Vocabulary Scales by the three control groups.

Verbal ability grades		Groups							
		O.D.C.		S.D.C.		S.R.C.		Total group	
		No.	%	No.	%	No.	%	No.	%
Definitely above average	I	9	23.7	4	10.5	5	13.2	18	15.8
	II+	1	2.6	6	15.8	7	18.4	14	12.3
	II	10	26.3	7	18.4	17	44.7	34	29.8
Average	III+	8	21.1	12	31.6	7	18.4	27	23.7
	III	2	5.3	3	7.9	1	2.6	6	5.3
	III-	4	10.5	2	5.3	1	2.6	7	6.1
Definitely below average	IV	0	0.0	0	0.0	0	0.0	0	0.0
	IV-	3	7.9	4	10.5	0	0.0	7	6.1
	V	1	2.6	0	0.0	0	0.0	1	.9
Total number of children		38		38		38		114	

Table 4.18 shows the mean standardized scores on the vocabulary scales for all the groups and the F ratios computed on the differences between the scores for each physically handicapped group and its respective control group. It can be seen from Table 4.18 that the controls for the S.D. and S.R. groups are significantly more able verbally, and the same direction is maintained in the case of the O.D.C. group although it does not reach significance.

Table 4.18 Mean standardized scores for the Crichton and Mill Hill Vocabulary Scales and the F ratios for each PH group and its corresponding control group.

Verbal Intelligence

Group	Size of group	Mean Standardized score	S.D.	F. ratio	df
O.D.	38	104.7	16.7	2.01	1,74
O.D.C	38	109.7	13.7		
S.D.	38	100.0	14.1	7.90**	1,74
S.D.C.	38	108.4	12.2		
S.R.	38	96.9	14.1	49.36***	1,74
S.R.C.	38	115.0	7.4		

** $p < .01$ *** $p < .001$

XI. Absence from school.

There were no significant differences among the three groups of handicapped children in respect of school absences ($F = 1.62$, df 2, 11). The children attending

Special Day schools had the highest absence rate with a mean score of 48.18[1], next children at Special Residential schools with a mean score of 45.68, followed by children from Ordinary Day schools with a mean score of 30.68

Table 4.19 Absence from school, Mean scores and F ratios for each PH group and its control.

		Absences			
Group	Size of group	Mean scores	S.D.	F ratio	df
O.D.	38	30.7	35.9	5.00*	1,74
O.D.C.	38	15.5	21.7		
S.D.	38	48.2	44.1	20.86***	1,74
S.D.C.	38	14.3	12.1		
S.R.	38	45.7	49.0	19.71***	1,74
S.R.C.	38	9.2	13.2		

* $p < .05$ ***$p < .001$

The control children at boarding schools had the least absences of all the control children. The mean scores for the O.D.C., S.D.C. and S.R.C. groups were as follows: 15.47, 14.29 and 9.16. None of these differences was statistically significant ($F = 1.62$, df 2, 111).

When each physically handicapped group was compared with its respective control group, significant

[1] Each half day absence counted as one absence.

differences were found in the children's absences for all the sets. In each set the disabled children had many more absences than the controls (Table 4.19).

XII. Severity of physical incapacity.

The mean scores for the severity of physical incapacity for the three PH groups were as follows: 9.21, for the O.D. group; 10.74 for the S.D. group, and 11.55 for the S.R. group. The differences between these means were statistically significant ($F = 13.46$, df 2, 111, $p < .001$). The distribution of the severity of handicap for the PH children in the different types of schools is shown in Table 4.20.

Table 4.20 Severity of physical incapacity for the three groups of PH children.

Severity	Groups							
	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
Mild	31	81.6	21	55.3	13	34.2	65	57.0
Moderate	6	15.8	12	31.6	13	34.2	31	27.2
Severe	1	2.6	5	13.2	12	31.6	18	15.8
Total number of children	38		38		38		114	

XIII. Visual impact of handicap.

Table 4.21 shows the composition of the three physically handicapped groups with the visual impact of handicap. A comparison between the groups of children

whose handicaps had a mild visual impact and those whose handicap had a moderate or greater impact yielded significant differences (x^2 = 10.13, df 2, p = <.01). The children at special schools had handicaps of greater visual impact than those attending ordinary day schools.

Table 4.21 Visual impact of handicap for the three groups of PH children.

Severity	Groups							
	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
Mild	21	51.3	12	31.6	8	18.4	41	36.0
Moderate	16	42.1	12	31.6	5	13.2	33	28.9
Severe	1	2.6	11	28.9	17	44.7	29	25.4
Very Severe	0	0.0	3	7.9	8	21.1	11	9.6
Total number of children	38		38		38		114	

XIV. Major functional effect of handicap.

Table 4.22 shows the distribution of the main effect of the handicap on the children's functioning*. Impaired mobility was the most common effect among the three groups followed by impaired hand control.

* One child in the Day Special group was not rated as he was suffering from achondroplasic dwarfism. It was considered difficult to assess the main effect, if any, of the handicap on the child's functioning.

Table 4.22 Major functional effect of handicap for the three groups of PH children.

Major Effect	Groups							
	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
Impaired Mobility	31	81.6	25	67.6	34	89.5	90	79.6
Impaired Hand Control	5	13.2	11	29.7	2	5.3	18	15.9
Incontinence	1	2.6	0	0.0	2	5.3	3	2.7
Hearing	1	2.6	0	0.0	0	0.0	1	.9
Vision	0	0.0	1	2.7	0	0.0	1	.9
Total number of children	38		37		38		113	

XV. The nature of handicap.

The various disabilities found and their distribution in the different types of schools are shown in Table 4.23. It is clear that cerebral palsy is the most common disability among the children attending ordinary and special day schools, whereas spina bifida with hydrocephalus is most common among the children at special residential schools. As the number of subjects in each category was so small, statistical tests were not applied to Table 4.23.

The group specifying 'other'in Table 4.23 included children with a wide variety of disabilities. In the Ordinary Day (OD) group, one child had scoliosis,

another hydrocephalus with secondary spasticity, three had Perthe's Disease while two had suffered severe injuries resulting in degloving of right leg in one child and a traumatic amputation of an arm in the other. Three children in the Special Day (SD) group had hydrocephalus with associated ataxic diplegia, and there was one case of each of the following: fragilitas ossium, achondroplasia, and post-accident amputation of both legs. In the Special Residential (SR) group there were two children with fragilitas ossium and two with paraplegia following spinal injury.

Table 4.23 The nature of disabilities in the various types of school

Disability	Schools							
	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
Cerebral Palsy	22	57.9	17	44.7	8	21.1	47	41.2
Spina Bifida with Hydrocephalus	1	2.6	4	10.5	14	36.8	19	16.7
Spina Bifida without Hydrocephalus	1	2.6	2	5.3	2	5.3	5	4.4
Congenital Abnormalities excluding Thalidomide	2	5.3	2	5.3	0	0.0	3	2.6
Thalidomide Deformities	5	13.2	4	10.5	6	15.8	15	13.2
Muscular Dystrophy	0	0.0	3	7.9	4	10.5	7	6.1
Other	7	18.4	6	15.8	4	10.5	18	15.8
Total number of children	38		38		38		114	

The 114 children were sub-divided into those with and those without neurological abnormalities*. The prevalence of neurological handicaps among children in the different types of school is shown in Table 4.24 and the nature of damage for those with neurological involvement is given in Table 4.25.

Table 4.24 The prevalence of neurological abnormalities in the various types of school.

Type of Physical Handicap	Schools							
	O.D.		S.D.		S.R.		Total group	
	No.	%	No.	%	No.	%	No.	%
Neurological Abnormalities	24	63.2	24	63.2	22	57.9	70	61.4
No Neurological Abnormalities	14	36.8	14	36.8	16	42.1	44	38.6
Total number of children	38		38		38		114	

No statistical differences were found in the distribution of neurological abnormalities for the three groups of PH children (x^2 = 0.30, df 2). However, a statistical significant difference was found in the

* The term neurological abnormality refers to upper central system abnormalities.

Table 4.25 Children with neurological abnormalities in the various types of school.

Disability	Schools						Total Group	
	O.D.		S.D.		S.R.			
	No.	%	No.	%	No.	%	No.	%
Cerebral Palsy:								
right hemiplegia	12	50.0	0	0.0	1	4.5	13	18.6
left hemiplegia	2	8.3	2	8.3	1	4.5	5	7.1
spastic diplegia	5	20.8	8	33.3	3	13.6	16	22.9
ataxic diplegia	3	12.5	6	25.0	1	4.5	10	14.3
tetraplegia	0	0.0	1	4.2	0	0.0	1	1.4
quadriplegia	0	0.0	0	0.0	2	9.1	2	2.9
Spina Bifida with hydrocephalus	1	4.2	4	16.7	14	63.6	19	27.1
Hydrocephalus with secondary cerebral palsy	1	4.2	3	12.5	0	0.0	4	5.7
Total number of children	24		24		22		70	

distribution of unilateral and bilateral brain lesions ($X^2 = 20.63$, df 2, $p < .001$).

CHAPTER 5

SOCIAL RELATIONSHIPS IN SCHOOL

Social relationships of handicapped children and their controls in ordinary day schools are considered in this chapter. For this purpose the modified version of Centers and Centers Social Discrimination test was employed (page 78). First, a comparison of the handicapped children and their controls is made in an attempt to determine whether a visible physical disability creates a barrier to the social acceptance of the child. The relationships of peer acceptance to adjustment and other factors in the child and family are then explored. The aim of this analysis is to explain the factors which influence social acceptability of children.

Group comparisons

The scores for the physically handicapped children in ordinary day (OD) schools on the social discrimination test ranged from -27 as the lowest to +10 as the upper limit*. Twenty eight children had scores negative in value, seven had scores which were positive and three children were regarded as neutral (i.e. they received no 'mentions'). The mean score achieved by the group was -4.55.

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* A negative score indicates social rejection and a positive score, social approval.

Scores for the control children (ODC) ranged from -21 as the lowest to +33. Nine were negative, twenty-seven were positive and two were neutral. Their mean score was +6.34. A t-test for the significance of the difference between the means of the physically handicapped and its control group yielded a value of 4.70 which indicated a significance level of well beyond o.ool.

To provide a clearer statement of the overall differences in the social acceptability of the children in ordinary day schools, the rank of each child in his sex group in his class was analysed. Because of the variation in the numbers on which these ranks were based each child's rank was to make it comparable, converted into a percentile rank. A high percentile rank indicates approval and a low percentile rank, rejection.

Percentile ranks for the PH children ranged from 3 to 85. The mean percentile rank achieved for the group as a whole was 34. Rankings for the normal children ranged from 8 to 97 with a mean percentile rank of 64. Table 5.1 shows the distribution of the percentile ranks for the children in both the physically handicapped and the control group.

From Table 5.1 it can be seen that 68.4 per cent of the physically handicapped group (OD) scored below the 41st percentile (and almost one half below the 21st percentile). On the other hand, only 18.5 per cent

of the controls (ODC) scored below the 41st percentile. Similarly while 68.4 per cent of the control group scored above the 60th percentile, only 15.8 per cent of the physically handicapped children scored below this level. The differences in the percentile ranks for the O.D. and O.D.C. groups were significant (x^2 = 25.81, df 4, p = <.001)

Table 5.1 Social acceptability of PH and control children at Ordinary Day schools.

Group	Percentile Ranks									
	0-20		21-40		41-60		61-80		81-100	
	No.	%	No.	%	No.	%	No.	%	No.	%
O.D. (N=38)	12	31.6	14	36.8	6	15.8	5	13.2	1	2.6
O.D.C. (N=38)	5	13.2	2	5.3	5	13.2	13	34.2	13	34.2
Total No. of children (N=76)	17	22.4	16	21.1	11	14.5	18	23.7	14	18.4

Factors affecting social relations

Nature of disability

Table 5.2 shows the nature of disability and the degree of which handicapped children were accepted by normal children in their class.

Table 5.2 Social acceptability and nature of disability for O.D. group.

Nature of disability	Percentile Ranks 0-20 No.	%	21-40 No.	%	41.60 No.	%	61-80 No.	%	81-100 No.	%	Total No.
Cerebral Palsy	9	40.9	8	36.4	2	9.1	3	13.6	0	0.0	22
Spina Bifida	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	2
Thalidomide	2	40.0	1	20.0	2	40.0	0	0.0	0	0.0	5
Other	1	11.1	3	33.3	2	22.2	2	22.2	1	11.1	9
Total No. of children	12	31.6	14	36.8	6	15.8	5	13.2	1	2.6	38

Children with cerebral palsy had socially a relatively low status, 77.3 per cent scoring below the 41st percentile rank. Comparing the composition of the percentile ranks (0-40 vs 61-100) of the children with cerebral palsy with all other types of disabilities combined did not yield statistically significant differences (x^2 = .055 with Yates correction).

Severity of physical incapacity

A significant relationship was not found between the severity of disability and the extent to which the PH children were accepted by their normal peers (r = -0.261, df 36). The mean percentile rank for the mildly handicapped was 36.64 whereas for the moderately and severely handicapped children combined, the percentile was 22.71. The F ratio for the difference between the means was 2.43

(df 1, 3 6, N.S.). The composition of social acceptability and its relation to severity of disability is shown in Table 5.3.

Table 5.3 Social acceptability and severity of physical incapacity for O.D. group.

Severity of Disability	Percentile Ranks									
	0-20		21-40		41-60		61-80		81-100	
	No.	%	No.	%	No.	%	No.	%	No.	%
Mild (N=31)	9	29.0	10	32.3	6	19.4	5	16.1	1	3.2
Moderate & Severe (N=7)	3	42.9	4	57.1	0	0.0	0	0.0	0	0.0
Total No. of children	12	31.6	14	36.8	6	15.8	5	13.2	1	2.6

When the physically handicapped group was divided into those with and those without neurological abnormalities, differences in social status were found. The mean percentile rank for the children with neurological involvement was 29.08 whereas the mean percentile rank for the children without neurological abnormalities was 42.64. The difference between the means just failed to reach statistical significance ($F = 3.69$, df 36, $p = 0.06$). An impression of the overall differences in respect of neurological abnormalities and social acceptability can be gained from Table 5.4.

Table 5.4 Social acceptability of PH children with and without Neurological abnormalities in Ordinary Day schools.

Group	Percentile Ranks									
	0-20		21-40		41-60		61-80		80-100	
	No.	%	No.	%	No.	%	No.	%	No.	%
PH with neurological abnormalities (N=24)	10	41.7	9	37.5	2	8.3	3	12.5	0	0.0
PH without neurological abnormalities (N=14)	2	14.3	5	35.7	4	28.6	2	14.3	1	7.1
Total Number of children	12	31.6	14	36.8	6	15.8	5	13.2	1	2.6

Major functional effect of handicaps.

The major functional effect of the children's physical handicap and its relationship to the children's social acceptability is illustrated in Table 5.5. The results suggest that there were no significant differences between the various functional impairments and the children's social status among the peer group. The small number of children in certain of the categories in Table 5.5 indicates that the findings ought to be regarded as tentative.

Table 5.5 Social acceptability and the major functional effect of handicap for O.D. group.

Major effect of handicap	Percentile Ranks 0-20 No.	%	21-40 No.	%	41-60 No.	%	61-80 No.	%	81-100 No.	%
Impaired Mobility (N = 31)	10	32.3	11	35.5	4	12.4	5	16.1	1	3.2
Impaired Hand Control (N=5)	1	20.0	2	40.0	2	40.0	0	0.0	0	0.0
Other (hearing, Incontinence) (N = 2)	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0
Total number of children (N = 38)	12	31.6	14	36.8	6	15.8	5	13.2	1	2.6

Visual impact of disability.

The visual impact of the children's physical handicap appeared to have little influence on the children's social status in the classroom (x^2 = 3.97, df 4, NS). See Table 5.6

Table 5.6 Social acceptability and the visual impact of disability for O.D. group.

Severity of visual impact	Percentile Ranks 0-20 No.	%	21-40 No.	%	41-60 No.	%	61-80 No.	%	81-100 No.	%
Mild (N=21)	8	38.1	5	23.8	4	19.0	3	14.3	1	4.8
Moderate, Severe, Very severe (N=17)	4	23.5	9	52.9	2	11.8	2	11.8	0	0.0
Total number of children	12	31.6	14	36.8	6	15.8	5	13.2	1	2.6

Sex

Boys whether physically handicapped or normal achieved greater social acceptance by their peers than did girls. The mean percentiles for the PH boys and girls were 36.24 and 31.41 respectively. For control children the means were 69.62 for the boys and 59.12 for the girls. None of these differences was significant.

Social class

When the social class of the O.D. and O.D.C. groups were examined in relation to social acceptability the control children from classes I and II (Professional, Managerial) combined were more socially acceptable than were children from the other classes. The reverse was, however, the case for the PH children, the children from class I and II having the lowest mean percentile rank of all the classes. None of the differences between the social classes was statistically significant for either the O.D. or the O.D.C. groups.

Environmental home circumstances (EHC).

Breakdown of the social discrimination results in terms of the children's environmental home circumstances showed the same pattern as for social class. Table 5.7 shows that the control children from favourable home environmental circumstances gained on average the highest social positions in the classroom whereas the

opposite was true for the physically handicapped group.

Table 5.7 Social acceptability (mean percentile ranks) and environmental home circumstances for PH children and their controls at Ordinary Day schools.

	PH Children	Social Acceptability		F ratio
	No.	Mean	S.D.	
Home Circumstances				
Favourable	27	33.4	21.5	.09
Unfavourable	11	35.8	23.4	
Total number of children	38	34.1	21.8	
	Controls			
Home Circumstances	No.			
Favourable	26	76.7	17.1	21.42***
Unfavourable	12	41.6	28.2	
Total number of children	38	64.9	26.3	

***p = <.001

The differences between the mean percentile ranks in relation to EHC were significant for the control group but not for the physically handicapped group.

Intellectual Ability.

Intellectual ability (non-verbal) was found to

be an influencing factor in the social acceptance of both the handicapped and normal control children (See Table 5.8). The differences between the means as shown in Table 5.8 were significant for the control group only.

Table 5.8 Social acceptability (mean percentile ranks) and intellectual ability (non-verbal) for PH children and their controls at Ordinary Day schools.

	PH Children	Social Acceptability		F ratio
Intellectual Level	No.	Mean	S.D.	
Above Average	15	43.1	25.7	2.54
Average	15	30.3	14.4	
Below Average	8	24.3	21.3	
Total number of children	38	34.1	21.8	
Intellectual Level	Controls No.			
Above Average	15	71.2	24.8	3.68*
Average	15	69.8	21.3	
Below Average	8	44.0	29.7	
Total number of children	38	64.9	26.3	

* $p = < .05$

Table 5.9 illustrates the differences in the PH and control children's social status with regard

to the level of their verbal ability. The differences between the means were as with the non-verbal intellectual results, significant for the control group only.

Table 5.9 Social acceptability (mean percentile ranks) and verbal ability for PH children and their controls in Ordinary Day schools.

	PH Children	Social Acceptability		F ratio
	No.	Mean	S.D.	
Level of Non-Verbal ability				
Above Average	18	33.8	23.0	
Average	11	37.1	21.6	.19
Below Average	9	30.9	21.4	
Total number of children	38	34.1	21.8	
	Controls			
Level of Non Verbal Ability	No.			
Above Average	20	76.1	19.6	
Average	14	56.9	28.1	5.83**
Below Average	4	37.5	23.2	
Total number of children	38	64.9	26.3	

**p = <.01

School Attainment.

In the review of the literature it was stated that children who were not successful in academic

activities were perceived negatively by their peers. To test this, reading ability and arithmetical skills were correlated with the social positions of the PH and the control children by means of the Pearson's 'r'.

Among the physically handicapped children the correlation between social acceptability and attainment was .04 in the case of reading, and .25 in arithmetic. In the case of the controls the respective correlations were .32 and .31. Only one of these correlations reached significance at the .05 level and that was between reading and social acceptance in the control group.

When the teachers ratings of the children's ability at reading and mathematics were taken into consideration a tendency was found in both the physically handicapped and control group for the most able children to be the best accepted by their peer group. Table 5.10 shows that the differences between the mean percentile ranks were significant only in regard to the teachers' assessments of mathematical skills in the case of the physically handicapped children.

Social and Emotional Adjustment

Table 5.11 lists the Pearson correlation coefficient computed between the children's ranked social positions and their social and emotional adjustment as assessed by themselves (California Test of Personality). From Table 5.11 it can be seen that an association existed between the social position of the children in the classroom

Table 5.10 Social acceptability (mean percentile ranks) and teachers assessments of school attainment for PH children and their controls at Ordinary Day schools.

	PH children	Social Acceptability		F ratio
	No.	Mean	S.D.	
Attainment				
READING:				
Good	19	36.4	23.7	.36
Average	13	29.8	16.2	
Poor	6	35.8	30.6	
MATHEMATICS:				
Good	9	55.7	15.8	
Average	17	25.4	15.2	8.36**
Poor	12	30.3	23.7	
	Controls			
	No.			
Attainment				
READING:				
Good	12	69.8	27.5	
Average	18	68.2	22.6	1.65
Poor	2	50.3	30.1	
MATHEMATICS:				
Good	13	74.7	23.3	
Average	18	61.8	26.8	1.59
Poor	7	54.9	28.3	

**p = <.01

and their social and emotional adjustment. Both the physically handicapped and the control children indicated that sense of personal worth and feeling of belonging showed the strongest relationship with social acceptability. Sense of personal freedom was also of importance to the physically handicapped children whereas freedom from withdrawing tendencies was relevant for the normal control children.

Table 5.11 Pearson Correlation Coefficients between social acceptability and social and emotional adjustment.

Measures	Correlations with Social Acceptability PH children	Control children
Emotional Adjustment	.37*	.43*
Self reliance	.01	.25
Sense of personal worth	.40*	.40*
Sense of personal freedom	.40*	.03
Feeling of belonging	.41**	.41**
Withdrawing tendencies (freedom from)	.17	.37*
Nervous symptoms (freedom from)	.31	.21
Social Adjustment	.16	.36*
Social standards	-.05	.34*
Social skills	.06	.24
Anti-social tendencies (Fdm.)	.11	.13
Family relations	.27	.49**
School relations	.23	.35*
Community relations	.01	.03
Total Adjustment	.29	.43**

df, 36; *p $<$.05 **p $<$.01

Table 5.11 further shows that whereas social adjustment showed some relationship to the social acceptability of the normal children, little effect was noted for the handicapped children. This situation was also evident when the teachers' assessments of the children's social adjustment (Bristol Social Adjustment Guides) were examined. The correlation coefficients for the PH and control groups were .07 and -.50 respectively. A high score on the Bristol Social Adjustment Guides (BSAG) suggests poor adjustment. The negative correlation value for the control group indicates therefore that a positive relationship existed between poor social adjustment and low social acceptance.

Extraversion (Junior Eysenck Personality Inventory) was found to relate to social acceptability for the disabled children ($r = .35$, df 36, $p = <.05$). Neuroticism correlated negatively with social acceptability but the coefficient reached significance for the control children only ($r = -.36$, df 36, $p <.05$).

Teachers Assessment of Popularity.

Table 5.12 shows a cross tabulation of the popularity of the children assessed by the teachers against the children's ranked social positions. From this table it can be seen that the teachers assess the social status of the control children rather more accurately than that of the PH children. Seventy-six per cent of the normal children who were assessed by their teachers as

Table 5.12 Social Acceptability and Teachers' Assessment of Popularity

Extent of Popularity	0-20 No.	0-20 %	21-40 No.	21-40 %	41-60 No.	41-60 %	61.80 No.	61.80 %	81-100 No.	81-100 %	Mean Percentile rank
Liked O.D. (24)	4	16.7	11	45.8	5	20.8	3	12.5	1	4.2	37.7
O.D.C. (34)	4	11.8	0	0.0	4	11.8	13	38.2	13	38.2	68.8
On the fringe											
O.D. (10)	5	50.0	3	30.0	0	0.0	2	20.0	0	0.0	31.5
O.D.C. (3)	0	0.0	2	66.7	1	33.3	0	0.0	0	0.0	36.0
Disliked											
O.D. (4)	3	75.0	0	0.0	1	25.0	0	0.0	0	0.0	18.8
O.D.C. (1)	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	19.0
Total number of children	17		16		11		18		14		

being liked by their peers obtained a percentile rank of over 61. Only 16.7 per cent of the PH children assessed as liked by their teachers achieved a percentile of 61 and above. In fact whereas the teachers' assessment of popularity correlated -.40 with the children's ranked social positions for the control group (df 38, $p < .05$), the correlation coefficient for the disabled group was -.16 (df 36, NS). A negative correlation coefficient value indicates that a positive relationship existed between teachers and children's assessments of social status.

When the teachers were asked if they thought that the disabled children were bullied or teased at school it was stated that one child was teased frequently and ten occasionally. Eight of these eleven children had percentile ranks below 21. It should be noted that only three of the 11 children were said to be teased on account of disability. In contrast to the handicapped children, only two control children were said to be teased by their classmates. Both these children had percentile ranks above 61.

Location of School.

No significant differences were found in the social acceptance of the PH children by their normal peers in respect of the location of the schools. The mean percentile rank of the children attending schools in the city was 39.33 compared to 27.58 for the children in rural schools.

Comparative Data of Individual Questions on Social Discrimination Questionnaire.

Thus far the results for the social discrimination questionnaire have been considered for the questionnaire as a whole. Also of interest were differences in responses by the two groups of children to the individual questions. To reveal such differences the percentages of children in the classroom who named a PH child and the percentages who named a normal child were computed for each item. The findings are shown in Fig. 5.1.

Table 5.13 lists the t-values of the differences between the mean scores for the physically handicapped and the control children. From Fig. 5.1 and Table 5.13 it is seen that significantly less positive attitudes were expressed toward the disabled children than towards the normal peer group. The individual items were not broken down by any of the factors reported earlier owing to the small number of responses in certain categories.

FIG. 5. 1 Comparative percentages of classmates naming MH children and their controls on each of the 10 items on the Social Discrimination questionnaire

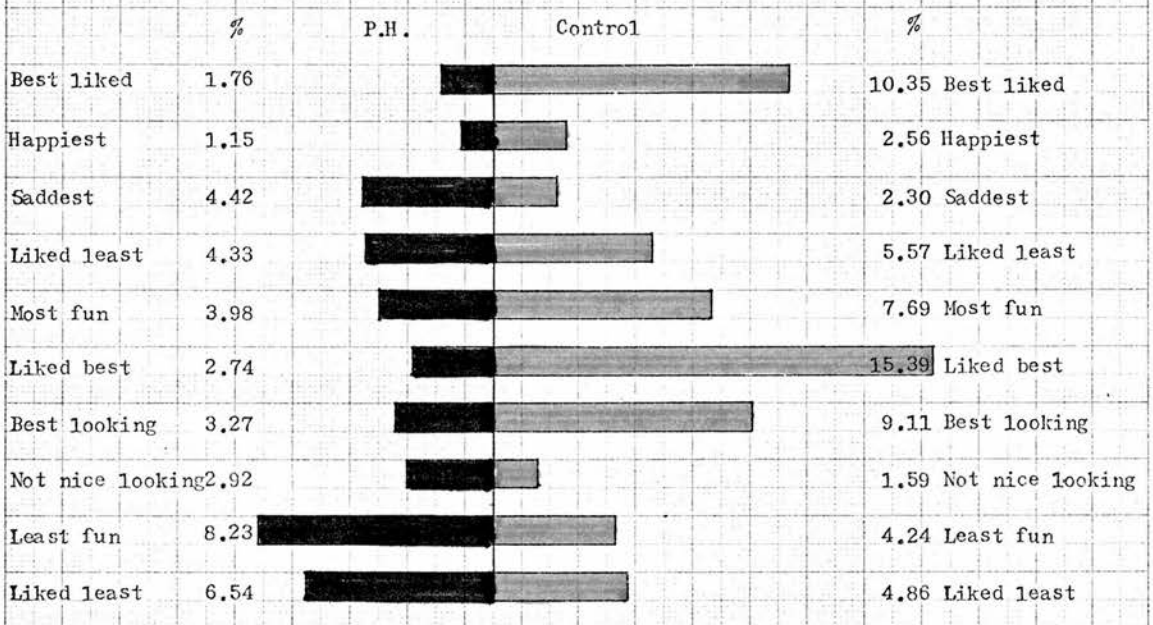

Table 5.13 The t-test values on the comparative means for the PH children and their controls on each of the ten items on the social discrimination test.

Best liked (by class)	-4.14***
Happiest	-2.40*
Saddest	1.45
Like least	-.0.79
Most fun	-1.81
Like best	-5.38***
Best looking	-3.36**
Not nice looking	1.06
Least fun	2.71**
Like least (by class)	1.00

df 37, *p <.05, **p <.01, ***p <.001

CHAPTER 6

CHILDREN'S OWN ASSESSMENTS OF SOCIAL AND EMOTIONAL DEVELOPMENT

This chapter examines the children's own assessments of their social and emotional adjustment by the use of the California Test of Personality (page 86) and the Junior Eysenck Personality Inventory (page 89).

Briefly, the California Test of Personality provides several scores: an overall adjustment score and scores for its constituents emotional and social adjustment. Emotional adjustment is based on feelings of personal security: *self reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies and nervous symptoms.* Social adjustment is founded on feelings of social security: *social standards, social skills, anti-social tendencies, family relations, school relations and community relations.* The Junior Eysenck Personality Inventory provides information on extraversion, neuroticism and tendency to 'fake good'.

The presentation of results follows the format outlined earlier. The aim of the analysis is to clarify the nature of the relationships which may exist between adjustment of children and type of school attended. It also seeks to explain which factors other than type of school help children attain good social and emotional adjustment.

Total Adjustment

(High score indicates good adjustment)

Comparison among PH children in three types of school.

The total scores on the California Test of Personality (CTP) indicated that there were no statistically significant differences among the three groups of physically handicapped children (F = .72, df 2, 111). See Table 6.1.

Table 6.1 Mean scores for total adjustment of PH children at the various types of school.

	Adjustment Total		
Schools	No. of children	Mean	S.D.
O.D.	38	96.76	23.03
S.D.	38	101.78	14.94
S.R.	38	98.30	17.13

Factors affecting total adjustment.

There was no significant relationship between severity of handicap and total adjustment for the group as a whole (r = 0.07, df 112) or for any of the three separate groups.

The Pearson r's for the O.D., S.D. and S.R. groups were -.26, -.04 and -.04 respectively.

No significant differences arose when the total adjustment scores were broken down in terms of the visual

impact of children's disability or the major functional effect of the handicap.

Table 6.2 shows that children at O.D. and S.D. schools with neurological abnormalities obtained lower mean adjustment scores than those without neurological involvement. The reverse was true for children at S.R. schools. The differences were not statistically significant for any of the groups of PH children.*

Table 6.2 Overall adjustment (C.T.P.) in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Total Adjustment		PH children without neurological abnormalities	Total Adjustment		F ratio
	No.	$\bar{x}$	S.D.	No.	$\bar{x}$	S.D.	
O.D.	24	94.19	23.28	14	101.18	22.75	.81
S.D.	24	100.88	16.12	14	103.32	13.09	.23
S.R.	22	98.75	19.07	16	97.69	14.64	.03
All	70	97.91	19.65	44	100.59	16.99	.55

No differences of statistical significance were found in the total adjustment of the disabled boys and girls at the various types of school (Table 6.3)

Total adjustment in the handicapped children was found to be independent of family size, position in family, social class or environmental home circumstances. What was important, however, was the intellectual level of the children. Total adjustment for the total group of PH

* There was no difference in the adjustment of children with unilateral and bilateral brain lesions at ordinary day schools. ($t = 0.176$, df 22). Due to sample characteristics (Table 4.25, page 150) similar statistical analysis was not carried out on the children attending special schools.

children correlated .30 (df 112, $p < .01$) with non-verbal intelligence and .32 (df 112, $p < .001$) with verbal intelligence. Table 6.4 shows a breakdown of the adjustment scores in terms of level of intellectual ability. It can be seen that the brighter children considered themselves to be the better adjusted.

Table 6.3 Sex differences in overall adjustment of PH children at the various types of school.

	Females	Total adjustment		Males	Total adjustment		F ratio
Schools	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	17	97.74	25.82	21	95.98	21.13	.05
S.D.	17	102.88	13.18	21	100.88	16.49	.16
S.R.	17	96.65	11.59	21	99.64	20.77	.28
All	51	99.09	17.87	63	98.83	19.37	.01

Table 6.4 Overall adjustment and intellectual ability in PH children.

Intellectual ability	PH children No.	Total Adjustment Mean	S.D.	F ratio
Non-verbal				
Above average	43	105.13	19.11	
Average	50	96.54	16.14	4.49*
Below average	21	92.02	20.24	
Verbal				
Above average	40	106.81	19.46	
Average	39	97.80	14.34	7.38***
Below average	35	91.24	18.83	

df 2,111 *$p < .05$, ***$p < .001$

No attempt is made to relate the adjustment of the physically handicapped children to their attitudes to school, their parents' attitudes, their family relationships and their educational adjustment until each of these factors has been examined separately.

Comparison among control children at day and residential schools.

The children at boarding schools obtained a higher mean total adjustment score (105.43) than those at day schools (100.30). The differences between the means was not significant ($t = 1.42$, df 112).

Factors affecting adjustment.

No significant differences were found between the overall adjustment of the normal boys and girls ($F = .92$, df 1,112). The mean total adjustment score was 103.49 for the boys as a total group and 100.19 for all the girls.

Family size, position in family, social class environmental home circumstances and intellectual ability correlated positively with overall adjustment. The correlations were all low but significant. The negative values of Pearson r's shown in this table are due to the inverse weighting on the variables, family size, position in family, social class and environmental home circumstances.

Table 6.5 Pearson correlation coefficients between total adjustment and family size, position in family, social class, environmental home circumstances and intellectual ability (non-verbal and verbal) for 114 normal children.

Variables	Correlation with total adjustment
Family size	-.37***
Position in family	-.24**
Social class	-.21*
Environmental home circumstances	-.26**
Non-verbal intellectual ability	.29**
Verbal intellectual ability	.47***

*p < .05 **p < .01 ***p < .001

As with physically handicapped children the level of intellectual ability both verbal and non-verbal gave rise to significant differences in the total adjustment of the control children, i.e. brighter children were better adjusted than were dull children (Table 6.6).

Table 6.6 Overall adjustment and intellectual ability in control children.

Intellectual ability	Controls No.	Total Adjustment Mean	S.D.	F ratio
Non-verbal				
Above average	48	107.95	17.10	
Average	48	99.84	18.70	6.06**
Below Average	18	91.97	15.33	
Verbal				
Above average	66	108.47	16.97	
Average	40	94.41	16.29	12.41***
Below Average	8	86.75	16.52	

df 2,111, **p <.01 and ***p <.001

Comparison of handicapped children and their controls.

None of the differences which are shown in Table 6.7 with respect to the PH groups and their respective control groups was statistically significant.

Table 6.7 Comparison of overall adjustment of PH children with their controls.

	Controls No.	Mean	S.D.	t-value
O.D.	38	96.76	23.03	-1.21
O.D.C.	38	101.26	17.83	
S.D.	38	101.78	14.94	.56
S.D.C.	38	99.34	18.42	
S.R.	38	98.30	17.13	-1.77
S.R.C.	38	105.43	18.63	

Emotional Adjustment

(High score indicates good adjustment)

Comparison among handicapped children at the three types of schools.

The results from the emotional adjustment component of the California Test of Personality showed that the disabled children at Special Day schools obtained slightly higher scores than did either those at Ordinary Day or at Residential Special schools. This difference in favour of the Special Day group which can be seen in Table 6.8 does not, however, reach statistical significance ($F = .40$, df 2,111).

Table 6.8 Mean scores for emotional adjustment of the PH children at the various types of school.

	PH children	Emotional Adjustment	
Schools	No.	Mean	S.D.
O.D.	38	47.87	13.13
S.D.	38	49.24	8.24
S.R.	38	47.09	9.93

None of the individual sub-sets which made up the emotional adjustment component showed significant differences among the groups. The variable which appeared best to discriminate, however, among the three groups of handicapped children was freedom from withdrawing tendencies.

Children from Special Day schools were the least emotionally withdrawn with a mean score of 8.17; those from Ordinary Day schools followed with a mean score of 7.25; those from Special Residential schools were the most withdrawn with a mean score of 6.53. The differences between the means resulted in an F ratio of 2.53 (df 2,111, p = .08).

Factors affecting emotional adjustment

Emotional adjustment and severity of physical incapacity were not related. For the group as a whole the correlation coefficient was -.08. For the children at O.D.. S.D. and S.R. schools the coefficients were -.29, -.02 and -.14 respectively. The mean emotional adjustment score for the children with mild handicaps was 48.89 compared with 46.97 for those with moderate and severe handicaps. Neither visual impact of disability or major functional effect of handicap had any significant influence on emotional adjustment of the children.

Children with neurological abnormalities who attended Ordinary Day and Special Day schools obtained lower mean emotional adjustment scores than did their peers with no neurological involvement. This pattern of results was reversed for children at Special Residential schools. None of the differences in the emotional adjustment of the two sub-groups of children in the various types of school was significant. See Table 6.9.

Table 6.9 Emotional adjustment (C.T.P.) in children with and without neurological abnormalities.

	PH children with neurological abnormalities	Emotional Adjustment		PH children without neurological abnormalities	Emotional Adjustment		F ratio
Schools	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	46.15	13.80	14	50.82	11.78	1.13
S.D.	24	48.31	9.55	14	50.82	5.27	.82
S.R.	22	47.39	11.64	16	46.69	7.28	.04
All	70	47.28	11.66	44	49.32	8.54	1.01

Analysis of the individual components of emotional adjustment gave rise to a significant difference in relation to sense of personal worth but only among children at Special Day schools. The neurologically normal children had a greater sense of personal worth than had neurologically abnormal children, the mean scores being 9.79 and 8.35 respectively ($F = 4.90$, df 1,36, $p < .05$).

Differences in sex gave rise to very little difference in emotional adjustment of the physically handicapped children. Boys in the three different types of school had slightly higher mean scores than had the girls but these differences never reached significance. See Table 6.10.

Family size, position in family, social class, environmental home circumstances, none of these had any effect on the emotional adjustment of the physically

handicapped children. Emotional adjustment was found to be dependent rather on the intellectual ability of the children. Table 6.11 shows the mean adjustment scores for children of different verbal and non-verbal intellectual abilities. It can be seen that the brighter children were emotionally better adjusted than were dull children.

Table 6.10 Sex differences in emotional adjustment of PH children at the various types of school.

Schools	Females No.	Emotional Adjustment Mean	S.D.	Males No.	Emotional Adjustment Mean	S.D.	F ratio
O.D.	17	47.85	13.91	21	47.88	12.80	.00
S.D.	17	48.35	7.75	21	49.95	8.74	.35
S.R.	17	45.09	7.04	21	48.71	11.68	1.26
All	51	47.10	9.96	63	48.85	11.06	.77

Table 6.11 Emotional adjustment and intellectual ability in PH children.

Intellectual ability	PH children No.	Emotional Adjustment Mean	S.D.	F ratio
Non-verbal				
Above average	43	51.64	10.42	
Average	50	46.49	9.49	4.46*
Below average	21	44.50	11.64	
Verbal				
Above average	40	52.09	10.90	
Average	39	46.71	9.07	5.04**
Below average	35	44.99	10.60	

df 2,111 *p $<$.05 **p $<$.01

Comparison among control children at day and residential schools.

There were no statistically significant differences between children at day and residential schools. The mean scores were 49.09 and 51.08 respectively ($t = 1.02$, df 112).

When the scores which made up the six sub-sets of emotional adjustment were analysed the only differences between the children at day and at boarding schools which reached statistical significance were those pertaining to freedom from nervous symptoms. Children at boarding schools considered themselves to be more free from nervous symptoms than did children at ordinary day schools, the means being 8.09 and 6.84 respectively. The difference between the means were significant at the .05 level ($t = 2.23$, df 112).

Factors affecting emotional adjustment of the control children.

There were significant differences between the sexes in the emotional adjustment of the whole group of control children. Table 6.11a shows that boys were emotionally better adjusted than were the girls. It can also be seen from Table 6.11a that for the separate groups of control children only the sex differences in the O.D.C. group led to differences in emotional adjustment that reached statistical significance.

Table 6.11a Sex differences in emotional adjustment of control children

Schools	Females	Emotional adjustment		Males	Emotional adjustment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.C.	17	45.74	10.96	21	52.43	6.63	5.41*
S.D.C.	17	48.29	9.26	21	49.12	9.77	.07
S.R.C.	17	47.94	11.45	21	53.62	9.62	2.76
All	51	47.32	10.45	63	51.72	8.86	5.92*

*p < .05

Low but significant positive correlations were found between emotional adjustment and family size, position in family, environmental home circumstances and both verbal and non-verbal intellectual ability (Table 6.12). In other words the children who obtained a high score on the emotional adjustment scale were more likely than those with a low score to come from small size families with high ordinal positions, to have a good home environment and to be of high intelligence.

Table 6.12 Pearson correlation coefficients between emotional adjustment and family size, position in family, environmental home circumstances and verbal and non-verbal intellectual ability for 114 control children.

Variables	Correlation with emotional adjustment
Family size	-.39***
Position in family	-.33***
Environmental home circumstances	-.22*
Non-verbal intellectual ability	.29**
Verbal intellectual ability	.43***

*p <.05, **p <.01, ***p <.005

The mean adjustment scores for children of different intellectual abilities are illustrated in Table 6.13.

Once again as with PH children the intellectually brighter children were the better adjusted emotionally.

Table 6.13 Emotional adjustment and intellectual ability in control children.

Intellectual ability	Controls No.	Emotional adjustment Mean	S.D.	F ratio
Non-verbal				
Above average	48	52.94	8.98	
Average	48	48.72	10.26	6.43**
Below average	18	44.03	7.69	
Verbal				
Above average	56	52.95	9.23	
Average	40	45.59	9.20	9.65***
Below average	8	44.25	7.74	

df 2,111, **p <.01, ***p <.001

Comparison of handicapped children with their controls.

Reference to Table 6.14 shows that disabled children were as well adjusted emotionally as were control children.

No significant differences were found between PH children at Ordinary Day schools and their controls or between disabled children at Special Day schools and their controls with respect to any of the sub-sets of the emotional adjustment component. Children at Special

Residential schools and their controls at normal boarding schools did differ significantly with regard to their sense of personal freedom. The mean scores for the S.R. and S.R.C. groups were 8.74 and 9.93 respectively ($t = -2.50$, df 37, $p < .05$) indicating that the normal children had a greater sense of personal freedom.

Table 6.14 Comparison of emotional adjustment in PH children and their controls.

Schools	Children	Emotional Adjustment		t value
	No.	Mean	S.D.	
O.D.	38	47.87	13.13	-0.70
O.D.C.	38	49.43	9.33	
S.D.	38	49.24	8.24	0.22
S.D.C.	38	48.75	9.42	
S.R.	38	47.09	9.93	-1.76
S.R.C.	38	51.08	10.72	

Social Adjustment

(High score indicates good adjustment)

Comparison among handicapped children at the three types of school.

Results from the social adjustment component of the California Test of Personality showed that PH

children at Ordinary Day schools had the lowest mean adjustment score; followed by children at Residential schools and finally by children at Special Day schools (Table 6.15). However, these differences in the social adjustment of the children at the different types of school failed to reach statistical significance (F = 2.43, df 2,111).

Table 6.15 Mean scores for social adjustment (CTP) for PH children at the various types of school.

Schools	PH children	Social Adjustment	
	No.	Mean	S.D.
O.D.	38	48.89	11.37
S.D.	38	53.51	6.99
S.R.	38	50.95	8.58

The most striking finding from the analysis of the individual components of social adjustment was the significantly greater freedom from anti-social tendencies shown by the physically handicapped children at Special Day schools, than by either the children at Ordinary Day or at Special Residential schools. The mean scores were 8.67 for the S.D. group, 7.55 for the S.R. groups and 6.62 for the O.D. group. These differences were significant at the .01 level (F = 4.78, df 2,111). When the means were subjected to the Scheffé

range test it was found that children at Special Day schools differed significantly from those at Ordinary Day schools at the .05 level. They did not differ significantly from the children at Special Residential schools.

Factors affecting social adjustment of handicapped children.

Severity of disability correlated -.05 with social adjustment for the total group of handicapped children. The correlation coefficients between severity of disability and social adjustment for the separate groups of PH children were: -.19 for the O.D. group, -.06 for the S.D. group and .04 for the S.R. group. None of these coefficients was significant.

Significant differences were not evident in the social adjustment of the children with respect to either visual impact or major functional effect of their disabilities. However, it is of interest that the mean social adjustment score of the children with handicaps of moderate or greater visual impact was higher (52.25) than the mean score of those with disabilities of mild visual impact (49.10).

Reference to Table 6.16 shows that children with neurological involvement who attended Ordinary Day and Special Day schools obtained lower mean social adjustment scores than did their peers with no neurological

abnormalities. This pattern of results was reversed for children at Special Residential schools. None of the differences in social adjustment of the two sub-groups of children in the various types of school was significant.

Table 6.16 Social adjustment (CTP) in children with and without neurologicab abnormalities.

Schools	PH children with neurological abnormalities	Social Adjustment		PH children without neurological abnormalities	Social Adjustment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	48.04	11.02	14	50.36	12.22	.36
S.D.	24	52.56	7.58	14	55.14	5.73	1.21
S.R.	22	51.36	8.70	16	50.38	8.67	.12
All	70	50.64	9.30	44	51.89	9.29	.49

From Table 6.17 it can be seen that the girls in the three different types of school achieved higher mean social adjustment scores than did the boys. The differences favouring the girls were not significant.

Table 6.17 Sex differences in social adjustment of PH children at the various types of school.

Schools	Females	Social adjustment		Males	Social adjustment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	17	49.88	13.88	21	48.10	9.72	.23
S.D.	17	54.53	6.58	21	52.69	7.36	.64
S.R.	17	51.60	6.34	21	50.45	10.17	.15
All	51	51.99	9.37	63	50.41	9.21	.81

No relationship was found between social adjustment and the demographic details, family size, position in family, social class, or environmental home circumstances. The social adjustment scores for handicapped children correlated .28 (df 112, $p < .01$) with both non-verbal and verbal intelligence, thus good social adjustment was associated with higher intellect. Table 6.18 illustrates the differences in the social adjustment of the children with regard to level of their non-verbal and verbal ability.

Comparison among control children at day and residential schools.

A comparison of the social adjustment scores for the normal children at day and at boarding schools revealed no significant differences, the mean score for the boarding

and the day school children being 54.38 and 51.20 respectively (t = 1.63, df 112).

Table 6.18 Social adjustment and intellectual ability in PH children.

Intellectual ability	PH children	Emotional adjustment		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	43	54.12	9.44	
Average	50	49.91	8.02	4.22*
Below average	20	47.75	10.44	
Verbal				
Above average	40	54.48	10.07	
Average	39	51.09	6.39	6.06**
Below average	35	47.31	9.80	

df 2,111 *p <.05 **p <.01

Analysis of six sub-sets making up social adjustment showed that there were significant differences in the control children's family relationships. Children at boarding school assessed these as being stronger than those of children at day schools. The respective mean scores were 10.33 and 9.36 (t = 2.17, df 112, p <.05).

Factors affecting social adjustment.

Sex differences in the social adjustment of

normal children were not significant. Table 6.19 shows that females with the exception of the O.D.C. group obtained the higher mean scores. When, however, all the children attending day schools were combined the girls had a higher mean score (51.78) than the boys (50.73).

Table 6.19 Sex differences in social adjustment of control children.

Schools	Females	Social adjustment		Males	Social adjustment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.C.	17	49.62	11.41	21	53.57	8.53	1.49
S.D.C.	17	53.94	9.83	21	47.88	10.11	3.46
S.R.C.	17	55.03	9.04	21	53.86	9.76	.14
All	51	52.86	10.22	63	51.77	9.74	.34

Family size, social class, environmental home circumstances and the intellectual ability of the control children were related to social adjustment of the control children (Table 6.20), the trend being similar to that for emotional adjustment.

The differences in social adjustment in relation to level of intellectual ability is illustrated in Table 6.21. Once again it can be seen that brighter children were better adjusted than were dull children.

Table 6.20 Pearson correlation coefficients between social adjustment and family size, social class, environmental circumstances and verbal and non-verbal intellectual ability for 114 control children.

Variables	Correlation with social adjustment
Family size[1]	-.29**
Social class[1]	-.25**
Environmental home circumstances[1]	-.27**
Non-verbal intellectual ability	.25**
Verbal intellectual ability	.41***

df 112, **p <.01, ***p <.001

[1]The negative value of Pearson r is due to the inverse weighting on this variable.

Table 6.21 Social adjustment and intellectual ability in control children.

Intellectual ability	Controls	Social adjustment		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	48	55.01	9.54	
Average	48	51.13	9.73	4.07*
Below average	18	47.94	9.86	
Verbal				
Above average	66	55.52	8.96	
Average	40	48.83	9.14	11.69***
Below average	8	42.50	10.13	

df 2,111, *p <.05, ***p <.001

Comparison of handicapped children with their controls.

Table 6.22 shows that no significant differences were found in social adjustment of any of the groups of handicapped children and their controls. With the exception of physically handicapped children at Special Day schools other handicapped children, however obtained lower mean scores than the controls.

6.22 Comparison of social adjustment of PH children with their controls.

Schools	Children	Social adjustment		t
	No.	Mean	S.D.	value
O.D.	38	48.89	11.37	-1.53
O.D.C.	38	51.80	9.98	
S.D.	38	53.59	6.98	1.25
S.D.C.	38	50.59	10.31	
S.R.	38	50.95	8.58	-1.67
S.R.C.	38	54.38	9.34	

Significant differences were not found in the mean scores of any of the sub-sets between PH children at Ordinary Day and their controls. Differences were found between physically handicapped at Special Day schools and their controls in relation to anti-social tendencies: with a mean score of 8.67 the physically handicapped at Special Day schools showed greater freedom from anti-social tendencies than did their controls, whose mean score was

7.13 ($t = 2.18$, df 37, $p < .05$).

Social standards and family relations gave rise to significant differences between physically handicapped children at Special Residential schools and their controls. The controls assessed themselves as having higher social standards than the physically handicapped children, the respective means being 10.05 and 9.12 ($t = 2.81$, df 37, $p < .01$). Similarly the controls considered their family relationships were stronger than the physically handicapped group, the means being 10.33 and 9.26 respectively ($t = 2.20$, df 37, $p < .05$).

Extraversion

(High score indicates extraversion)

Comparison among handicapped children at the three types of school.

Scores derived from the extraversion factor of the Junior Eysenck Personality Inventory (JEPI) indicated that there were no significant differences in the extraversion of the physically handicapped children at the different types of school. The findings are shown in Table 6.22.

Table 6.22 Mean scores for extraversion (JEPI) in the PH children at the various types of school.

Schools	PH children	Extraversion		F ratio
	No.	Mean	S.D.	
O.D.	38	17.42	3.55	
S.D.	38	16.53	3.66	.67
S.R.	38	17.08	2.98	

Factors affecting extraversion.

Severity of handicap, visual impact and major functional effect of the disability were not related to extraversion of the children to any significant degree.

From Table 6.23 it can be seen that the total group of handicapped children with neurological abnormalities rated themselves as extraverted to a greater degree than did the neurologically normal children. The greater extraversion among the neurologically normal children was only confined to the children at Special Day schools. A significant interaction was found as to whether or not the children had neurological abnormalities and to the type of school attended, ($F = 3.54$, df 2,108, $p < .05$)

Table 6.23 Extraversion (JEPI) in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Extra-version		PH children without neurological abnormalities	Extra-version		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	17.21	3.45	14	17.79	3.81	.23
S.D.	24	17.67	2.91	14	14.57	4.07	7.42**
S.R.	22	16.86	2.19	16	17.38	3.88	.27
All	70	17.26	2.89	44	16.61	4.08	.97

df 1,36 **p < .01

Significant differences in extraversion were not found when the sex of the PH children was taken into consideration. Furthermore family size, position in family, social class and environmental home circumstances had no effect on the extraversion scores.

The level of intellectual ability both non-verbal and verbal gave rise to differences in extraversion in the handicapped children as a group. Reference to Table 6.24 shows that children of above average intelligence were the most extraverted.

Table 6.24 Extraversion and intellectual ability in PH children.

Intellectual ability	PH children	Extraversion		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	41	18.12	3.71	
Average	50	16.48	3.01	4.02*
Below average	21	16.00	3.11	
Verbal				
Above average	40	18.10	3.14	
Average	39	16.69	4.17	3.60*
Below average	35	16.11	2.31	

df 2,111 *p < .05

Comparison among control children at day and residential schools.

The findings on extraversion for the control children indicated that there were no significant differences between the children at day and those at boarding schools. The respective mean extraversion scores were 17.80 and 17.37 ($t = .61$, df 112).

Factors affecting extraversion.

The boys as a total group were extraverted to a greater degree than were the girls, the means being 18.21 and 16.98 respectively. Differences between the means, however, failed to reach statistical significance ($F = 3.42$, df 1,112, $p=0.06$). Low but significant correlations were found between extraversion and family size as well as position in family. The respective coeffients were -.33 (df 112, $p < .001$) and -.22 (df 112, $p < .05$) thus children from small families with high ordinal positions (elder children) considered themselves more extraverted than children from large families with low ordinal positions.

Breaking down extraversion scores by the different levels of intellectual ability, both verbal and non-verbal, did not produce any significant difference. A low but significant positive correlation which was found between extraversion and verbal ability ($r = .25$, df 112, $p < .01$) does, however, suggest that a slight tendency existed for children of high verbal ability to be more

more extraverted than children of poor verbal ability.

Comparison of handicapped children with their controls.

Each group of disabled children had consistently lower mean extraversion scores than had the corresponding control children, none of the differences was, however, significant (Table 6.25).

Table 6.25) Comparison of extraversion of PH children with their controls.

Schools	Children No.	Extraversion Mean	S.D.	t value
O.D.	38	17.42	3.55	-0.35
O.D.C.	38	17.68	3.74	
S.D.	38	16.53	3.66	-1.74
S.D.C.	38	17.92	3.11	
S.R.	38	17.08	2.98	-0.39
S.R.C.	38	17.37	3.85	

Neuroticism

(High score indicates instability)

Comparison among handicapped children in the three types of school.

The findings on the neuroticism factor (JEPI) revealed that there were no significant differences in the neuroticism of the physically handicapped children at the

different types of school (F = 1.17, df 2,111). The mean scores for each group are shown in Table 6.26.

Table 6.26 The mean scores for neuroticism (JEPI) for PH children at the different types of school.

Schools	PH children	Neuroticism	
	No.	Mean	S.D.
O.D.	38	12.71	6.13
S.D.	38	11.68	4.15
S.R.	38	13.45	4.65

Factors affecting neuroticism.

Significant differences were not found in the neuroticism scores of children in respect of severity of disability, visual impact or major functional effect of handicap. Furthermore significant differences did not occur in the neuroticism of physically handicapped children regardless of whether or not they were neurologically abnormal (Table 6.27).

Table 6.27 Neuroticism (JEPI) in children with or without neurological abnormalities.

Schools	PH children with neurological abnormalities	Neuroticism		PH children without neurological abnormalities	Neuroticism		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	12.75	6.52	14	12.64	5.62	.96
S.D.	24	11.58	4.31	14	11.86	4.02	.85
S.R.	22	12.86	5.49	16	14.25	3.15	.37
All	70	12.39	5.47	44	12.98	4.35	.55

Table 6.28 shows that differences between the sexes were significant only for children at Special Residential schools.

Table 6.28 Sex differences in neuroticism (JEPI) of PH children at the various types of school.

Schools	Females	Neuroticism		Males	Neuroticism		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	17	12.41	6.73	21	12.95	5.76	.07
S.D.	17	12.24	4.78	21	11.24	3.63	.53
S.R.	17	15.35	3.20	21	11.91	5.13	5.83*
All	51	13.33	5.21	63	12.03	4.89	1.88

df 1,36, *p $<$.05

Significant age differences in neuroticism were found for the group as a whole, the ten year olds obtaining the highest mean neuroticism score (14.24), followed by the eleven year olds (12.58) and then by the nine year olds (11.03). These differences were significant at the .05 level ($F = 3.94$, df 2,111).

Family size, position in family, social class or environmental home circumstances, none of these had any effect on the neuroticism scores of the physically handicapped children. Differences in neuroticism were found in respect of the level of verbal ability of the children. The highest mean neuroticism score was achieved by children of average verbal ability (14.39) followed by children of

below average verbal ability (12.60), and then by those who were above average in this respect (10.90). The F ratio for the differences between the means was 5.02 (df 2,111, $p < .01$).

Comparison among control children at day and residential schools.

Significant differences were not found in the neuroticism scores of day and of boarding school children. The respective means were 13.09 and 13.26 ($t = -.18$, df 112).

Factors affecting neuroticism.

A low but significant correlation coefficient was found for neuroticism and family size. The respective Pearson r's were .26 (df 112, $p < .01$). This suggests that children who came from small families tended to be less neurotic than those from large families.

Significant differences were found between the sexes for the whole group of children and for those attending day schools. From Table 6.29 it can be seen that in all cases the girls had higher neuroticism scores than the boys. The differences between the sexes were, however, only significant for the O.D.C. children.

Higher neuroticism scores were also found in the dull children, whether so classified verbally or non-verbally (Table 6.30).

Table 6.29 Sex differences in neuroticism of control children.

Schools	Females	Neuroticism		Males	Neuroticism		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.C.	17	14.94	4.23	21	11.24	3.86	7.93**
S.D.C.	17	13.71	4.66	21	12.95	5.27	.21
S.R.C.	17	14.00	5.55	21	12.67	4.67	.65
All	51	14.22	4.78	63	12.29	4.62	4.77*

df 2,111, *p < .05, **p < .01

Table 6.30 Neuroticism (JEPI) and intellectual ability in control children.

Intellectual ability	Controls	Neuroticism		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	48	11.98	4.10	
Average	48	13.44	5.36	3.91*
Below average	18	15.50	3.94	
Verbal				
Above average	66	11.89	4.00	
Average	40	14.85	5.39	5.90**
Below average	8	15.00	4.69	

df 2,111, *p < .05, **p < .01

Comparison of handicapped children with their controls.

A comparison of the scores on the neuroticism scale for each group of handicapped children and their controls showed no significant differences (Table 6.31).

Table 6.31 Comparison of neuroticism of PH children with their controls.

Schools	Children	Neuroticism		t value
	No.	Mean	S.D.	
O.D.	38	12.71	6.13	-0.17
O.D.C.	38	12.89	4.39	
S.D.	38	11.68	4.15	-1.36
S.D.C.	38	13.29	4.95	
S.R.	38	13.45	4.65	0.18
S.R.C.	38	13.26	5.05	

Lie scale (high scores indicates 'faking good').

Significant differences were found in the lie scale scores (JEPI) for the PH children at the different types of school ($F = 3.89$, df 2,111, $p < .01$). See Table 6.32.

Table 6.32 Lie scores (JEPI) for the PH children in the different types of school.

Schools	PH Children	Lie scores	
	No.	Mean	S.D.
O.D.	38	4.66	3.40
S.D.	38	6.37	3.11
S.R.	38	6.42	2.87

When posteriori contrasts were invoked it was found that the O.D. group differed significantly from the S.D. group at the .05 level ($t = -2.38$, df 111.0). Moreover the O.D. group differed significantly from the S.R. group at the .05 level ($t = -2.45$, df 111.0).

Factors affecting 'Lying' in handicapped children.

'L' scores were found to be independent of severity and visibility of handicap and the major functional effect of handicap.

When the children were divided into those with and without neurological handicaps, significant differences in lying arose. Neurologically abnormal children with exception of those at Special Day school obtained higher mean 'L' scores than did neurologically normal children. Table 6.33 shows that the differences in the 'L' scores were significant for the whole group of children and for those attending Special Residential school. The differences in 'L' scores in the children at Ordinary Day schools just failed to reach statistical significance ($p = .056$).

Table 6.33 Lie scores (JEPI) for children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities Lie Scores			PH children without neurological abnormalities Lie Scores			F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	5.46	3.11	14	3.29	3.54	3.90
S.D.	24	6.25	3.03	14	6.57	3.37	.09
S.R.	22	7.23	2.89	16	5.31	2.52	4.51*[1]
All	70	6.29	3.06	44	5.07	3.35	3.98*[2]

*[1]df 1,36 $p < .05$; *[2]df 1,112 $p < .05$

Table 6.34 shows that there were no significant differences in the lie scale scores for girls and boys. Furthermore no relationships were found between the lie scores of the children and family size, position in family, social class and environmental home circumstances.

Table 6.34 Sex differences in 'L' scores of handicapped children.

Schools	Females	Lie scores		Males	Lie scores		F
	No.	Mean	S.D.	No.	Mean	S.D.	ratio
O.D.	17	5.71	3.62	21	3.81	3.03	3.10
S.D.	17	7.06	2.73	21	5.81	3.36	1.53
S.R.	17	6.41	3.00	21	6.43	2.84	.00
All	51	6.39	3.13	63	5.35	3.23	3.02

The intellectually duller children both non-verbally and verbally scored higher on the lie scale than the brighter children, (Table 6.35).

Comparison among control children in day and residential schools.

Significant differences were not found in relation to lying between the day and boarding school children. The mean lie scale scores were 3.93 and 3.53 respectively ($t = .76$, df 112).

Table 6.35 Lie scores (JEPI) and intellectual ability in PH children.

Intellectual ability	PH children	Lie scores		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	43	4.88	2.89	
Average	50	5.96	3.39	4.63*
Below average	21	7.38	2.85	
Verbal				
Above average	40	4.27	2.50	
Average	39	5.92	3.20	10.77***
Below average	35	7.46	3.18	

df 2,111; *p $<$.05; ***p $<$.001

Factors related to 'L' scores.

Age was found to affect significantly the lie score for the control children. The mean lie score for the nine, ten and eleven year old children were 5.32, 3.56 and 2.71 respectively. The F ratio for the difference between these means was 11.40 (df 2,111, p $<$.001).

Significant differences did not occur between the sexes though the girls in both day and boarding schools had the higher mean scores.

Lying was found to be independent of family size, position in family, social class, environmental home circumstances, and intellectual ability.

Comparison of handicapped children with their controls.

Reference to Table 6.36 shows that no differences were found in the 'L' scores between disabled children at Ordinary Day schools and their controls. Disabled children at Special Day and Special Residential schools, however, lied more frequently than did the corresponding control children.

Table 6.36 Comparison of lie scale scores of handicapped with their controls.

Schools	Children	Lie scores		t value
		Mean	S.D.	
O.D.	38	4.66	3.40	1.14
O.D.C.	38	4.08	2.94	
S.D.	38	6.37	3.11	3.68***
S.D.C.	38	3.79	2.85	
S.R.	38	6.42	2.87	5.62***
S.R.C.	38	3.53	2.35	

df 37, ***p < .001

CHAPTER 7

TEACHERS' ASSESSMENT OF CHILDREN'S SOCIAL ADJUSTMENT IN SCHOOL

In this chapter the teachers' assessments of children's social adjustment in school is explored. The Bristol Social Adjustment Guides (Child in School) was used for this purpose (page 95). Essentially the 'Guide' provides a total score which indicates the degree of maladjustment. For the most part the results are examined in terms of these scores but some attention is also given to the individual symptoms which characterise maladjustment. The results are presented in a similar manner to the previous chapters.

The main aim of the analysis is to determine whether there are any differences in the nature and level of adjustment in school, as perceived by teachers, between children in ordinary and special schools. Another object of this chapter is to provide an understanding of the characteristics which aid social adjustment in school.

In addition, the relationships between children's self-reports and teachers' estimates of adjustment are investigated. Earlier mention has been made of the poor agreement between inventory responses and teacher ratings. It is not expected that the present data will differ from earlier work in this respect. However, divergent views may be telling in themselves, e.g. knowledge may be

obtained about the extent to which teachers' in ordinary and special schools can adequately assess the behaviour of physically handicapped children.

Social Adjustment

(Low score indicates good adjustment)

Comparison among PH children at the three types of school.

As assessed by the teachers on the Bristol Social Adjustment Guides (BSAG) the differences in adjustment of children in different types of school were not significant ($F = 1.13$, df 2,111). See Table 7.1 for details of the mean adjustment scores. It should be noted that a high score on the BSAG implies poor adjustment.

Table 7.1 The mean scores for adjustment (BSAG) of PH children at the various types of school.

Schools	PH Children	Adjustment	
	No.	Mean	S.D.
O.D.	38	9.84	8.90
S.D.	38	9.55	10.76
S.R.	38	7.11	5.72

The distribution of teachers' ratings of adjustment of physically handicapped children at the three types of school is shown in Table 7.2.

Table 7.2 Relationship between adjustment (BSAG) and type of school attended.

Adjustment	Schools O.D. No.	%	S.D. No.	%	S.R. No.	%	Total No.	%
Stable (0 - 4)	15	39.5	19	50.0	16	42.1	50	43.9
Quasi-stable (5 - 9)	7	18.4	5	13.2	9	23.7	21	18.4
Unsettled (10-19)	11	28.9	8	21.1	13	34.2	32	28.1
Maladjusted (20 +)	5	13.2	6	15.8	0	0.0	11	9.6
Total number of children	38		38		38		114	

The symptoms most frequently reported by the teachers were different for each group of handicapped children. Hostility to adults was most frequently mentioned in respect of physically handicapped children at Ordinary Day schools. This was closely followed by 'depression'.

The symptoms most frequently mentioned in relation to the children at Special Day schools was 'unforthcomingness' which is defined by Stott (1963) as "a lack of confidence with people and with fresh things or new situations". 'Restlessness' received the next most frequent mentions in this type of school.

For children at Special Residential schools 'anxiety or uncertainty about adult interest and affection'

was the symptom most frequently reported by the teachers. Next in frequency were 'depression' and 'hostility to adults'.

Factors affecting adjustment as rated by the teachers.

Severity of disability did not significantly affect the teachers' assessment of the children's adjustment. The mean scores, however, were 9.68 for children with mild handicaps and 7.71 for those with moderate and severe physical incapacity. This pattern of results was similar for visual impact of the disability although again the differences were not statistically significant. Those children who were primarily affected by mobility, were rated as more unsettled than those whose main functional impairment was arm hand control. The means although not significantly different were 9.42 and 5.78 respectively.

Table 7.3 shows that neurologically handicapped children in the three types of school were rated by the teachers as less stable than were neurologically normal children. However, the differences were not statistically significant.*

Table 7.3 Adjustment (BSAG) in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Adjustment		PH children without neurological abnormalities	Adjustment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	10.92	9.66	14	8.00	7.41	.95
S.D.	24	11.08	10.46	14	6.93	11.15	1.33
S.R.	22	7.23	5.44	16	6.94	6.27	.02
All	70	9.81	8.93	44	7.27	8.26	2.32

* There was no difference in the adjustment of children with unilateral and bilateral brain lesions at ordinary day schools

For the group as a whole the girls were assessed as significantly better adjusted than the boys. From Table 7.4 it can be seen that when the separate groups were considered, although all show the same trend, significant differences between the sexes was only found for the physically handicapped children at Ordinary Day schools.

Table 7.4 Sex differences in adjustment (BSAG) of PH children.

Schools	Females	Adjustment		Males	Adjustment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	17	5.94	5.58	21	13.00	9.93	6.83*[1]
S.D.	17	9.29	12.03	21	9.76	9.92	.02
S.R.	17	5.88	6.04	21	8.10	5.39	1.42
All	51	7.04	8.40	63	10.29	8.78	4.01*[2]

*[1] df 1,36, $p < .05$; *[2] df 1,112, $p < .05$

Teachers' assessments of adjustment did not correlate significantly with the children's family size, position in family or social class. Significant differences were, however, found in the adjustment of the children in relation to their environmental home circumstances. The mean adjustment scores for children from favourable environmental home circumstances and from unfavourable home circumstances were 7.45 and 11.61 respectively ($F = 6.01$, df 1,112, $p < .05$) thus favourable home environment was

($t = -0.889$, df 22). Due to sample characteristics (Table 4.25, page 150) similar statistical analysis was not carried out on the children attending special schools.

associated with better adjustment.

The level of intellectual ability both verbal and non-verbal gave rise to significant differences in the adjustment of the children. Reference to Table 7.5 shows that dull children were considered by their teachers to be less stable than those who were bright. Of note, children of average verbal ability were more stable than those of above average verbal intelligence.

Table 7.5 Adjustment (BSAG) and intellectual ability in PH children.

Intellectual ability	PH Children	Adjustment		F ratio
	No.	Mean	S.D.	
Non-verbal:				
Above average	43	7.12	7.72	
Average	50	8.32	7.46	4.25*
Below average	21	13.57	11.76	
Verbal:				
Above average	40	8.35	7.65	
Average	39	6.77	7.30	3.14*
Below average	35	11.69	10.62	

df 2,111 *p < .05

Comparison among control children at day and boarding schools.

No significant differences were found in the teachers' assessments of the adjustment of the control

children at day and boarding schools. The respective mean adjustment scores were 6.17 and 5.92 (t = 0.18, df 112). The distribution of teachers' ratings is shown in Table 7.6.

Table 7.6 Relationship between adjustment (BSAG) and type of schools attended for control children.

Adjustment	O.D.S.		S.D.C.		S.R.C.		Total	
	No.	%	No.	%	No.	%	No.	%
Stable (0- 4)	25	65.8	21	55.3	19	50.0	65	57.0
Quasi-stable (5- 9)	8	21.1	5	13.2	10	26.3	23	20.2
Unsettled (10.19)	4	10.5	7	18.4	8	21.1	19	16.7
Maladjusted (20 +)	1	2.6	5	13.2	1	2.6	7	6.1
Total number of children	38		38		38		114	

The attitude or symptom most frequently reported by the teachers was the same for both the day and boarding school children, namely 'unforthcomingness' but those reported next most frequent were different. Anxiety or uncertainty about adult interest and affection characterized the ODC group while depression was reported in the case of the S.D.C. children and restlessness in relation to the S.R.C. group.

Factors affecting teachers' assessments of adjustment.

Teachers' ratings of adjustment were found to be independent of the children's sex, family size, position in family and social class. What was important however, was the environmental home circumstances of the children. The children from favourable home circumstances obtained a mean adjustment score of 4.44 whereas those from unfavourable homes gained a mean score of 10.93. The differences between these means were significant well beyond the .001 level (F = 21.16, df 1,112). Thus once again as with the physically handicapped children, the favourable home environment was associated with better adjustment.

Table 7.7 shows that the teachers rated the intellectually brighter children significantly better adjusted than the intellectually dull children.

Table 7.7 Adjustment (BSAG) and intellectual ability of control children.

Intellectual ability	Controls	Adjustment		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	48	4.23	6.08	
Average	48	6.96	7.47	3.53*
Below average	18	8.72	7.88	
Verbal				
Above average	66	4.27	5.21	
Average	40	8.45	8.44	5.54**
Below average	8	9.25	9.84	

df 2,111 *p <.05 **p <.01

Comparison of handicapped children with their controls.

Table 7.8 shows that each handicapped group was rated by the teachers as less stable than their respective control group. The differences were, however, significant only for the handicapped children and their controls at Ordinary Day schools.

Table 7.8 Comparison of adjustment (BSAG) of handicapped children with their controls.

Schools	Children	Adjustment		t value
	No.	Mean	S.D.	
O.D.	38	9.84	8.91	3.37**
O.D.C.	38	4.39	5.20	
S.D.	38	9.55	10.76	.77
S.D.C.	38	7.95	9.17	
S.R.	38	7.10	5.72	1.02
S.R.C.	38	5.92	6.13	

df 37 **p < .01)

Reference to Table 7.9 shows the rank order of total mentions of teachers of each syndrome of the BSAG for physically handicapped children and their controls. Statistics were not applied to the findings summarised in the table owing to the small number of mentions allotted to certain of the syndromes. When the symptoms mentioned most frequently (rank order 1) and next in frequency (rank order 2) in relation to the physically handicapped groups and the

corresponding control groups are compared, it is noticeable that teachers believed physically handicapped children at OD schools were more hostile to adults and depressed than were their controls. The syndrome which was most characteristic of the SD children was similar to the one which typified their controls, i.e. unforthcomingness, restlessness and depression. A study of the groups, SR and SRC, showed that physically handicapped children were more anxious or uncertain about adult interest and attention and were more hostile to adults than were the controls.

Table 7.9 Comparison of the rank order of attitudes (BSAG) of PH children with their controls.

ATTITUDES	OD	ODC	SD	SDC	SR	SRC
Unforthcomingness (U)	3	1	1	1	5	1
Withdrawal (W)	9	9	9	8	8	8
Depression (D)	2	4	3.5	2	2.5	3
Anxiety about adult interest and affection (XA)	5.5	2	3.5	4	1	5
Hostility to adults (HA)	1	6	5	6	2.5	6.5
Unconcern for adult approval (K)	4	5	8	5	6	4
Anxiety for acceptance by other children (XC)	8	7	7	7	9	6.5
Hostility to other children (HC)	7	8	6	9	7	9
Restlessness (R)	5.5	3	2	3	4	2

CHAPTER 8

ATTITUDES OF PUPILS

Part I - Personality Scales

This chapter examines the attitudes of children to school by the use of Barker Lunn's scales (page 92). In essence, the ten scales deal with attitudes towards a) aspects of school and school work: *importance of doing well in school, attitudes to school, interest in school work, conforming versus non-conforming, attitude to class, 'other' image of class,* and b) personality and social relations: *relationship with teacher, anxiety in the classroom, academic self-image, social adjustment (getting on well with classmates).*

The results are examined with reference to actual scores. Each scale provides a score: a high score indicates a favourable attitude and a low score, an unfavourable attitude. The presentation of results takes the same format as the earlier chapters.

The object of the analysis is to determine the effects of type of school on children's attitudes towards school and the relationship of these attitudes to adjustment and other characteristics of the child.

Relationship with teacher

(High score indicates a 'good' relationship)

Comparison among handicapped children at the three types of school.

The results suggest that the handicapped children at Special Day schools thought their teachers to be more sympathetic towards them than was the case in children at Ordinary Day or Special Residential schools in respect of their teachers. The mean score for the SD group was 3.58, followed by the S.R. group with a mean score of 3.08, and then by children of the O.D. group (2.95). The differences were not, however, statistically significant ($F = 1.56$, df 2,111).

Factors affecting relationship with teacher.

The severity of the physical handicap did not appear to affect the teacher-pupil relationship for any of the PH groups. The Pearson correlation coefficient between these two variables was -.10 for the total group of PH children. The mean score for mildly disabled children was 3.31 while for the moderately and severe groups combined it was 3.04. When the children were divided into those with and without neurological abnormalities there were no uniform or significant distinctions among the three separate groups. With respect to the total group of children, those without neurological abnormalities saw their relationship with the teacher more positively than did those with neurological involvement. The difference between the two sub-groups

was, however nonsignificant. See Appendix D Table 3 for more detailed results.

Significant differences were found between children who were primarily affected by mobility and those whose main impairment was arm hand control ($F = 6.91$, df 1,106, $p < .01$). The children with poor arm hand control perceived relationship with their teacher as better than those whose mobility was poor, the respective mean scores being 4.06 and 2.99.

Differences of statistical significance were not found in relation to differences in sex. The tendency was for girls, except for those at special residential school to take a more favourable view of the relationships with their teachers. Details of mean scores for the different sexes is shown in Appendix D Table 1.

No connections were found for the total group of physically handicapped children between relation with their teacher and their socio-economic background, their environmental home circumstances or social and emotional adjustment. Of note, a negative correlation was found between the social status (social discrimination test) and the pupil-teacher relationship for the physically handicapped at OD schools ($r = -.32$, df 36, $p < .05$). This correlation would suggest that physically handicapped children who had poor relationships with their teachers were more likely than those with good relationships to be considered popular by their normal peer group.

Comparison among control children at day and residential schools.

Perceived teacher-approval did not yield any significant differences between the day and boarding school children. The respective means were 2.62 and 2.74 ($t = -0.38$, df 112).

Factors affecting relationship with teacher.

In complete contrast to the results with the physically handicapped children, the control children who saw themselves as being most liked by their teachers tended to have good environmental home circumstances ($r = -.26$), to be regarded as well adjusted by their teachers ($r = -.29$)*, and to view themselves as well adjusted socially ($r = .23$) and emotionally ($r = .23$). These correlations coefficients were significant at the .01 level (df 112). For the total group of children there was a further low but significant correlation between relationship with teacher and verbal intellectual ability ($r = .26$, df 112, $p < .01$).

Comparison of handicapped children with their controls.

When each group of handicapped children was compared with the respective control it was found that handicapped children more than controls believed that their teachers liked them. Table 8.1 shows that in spite of the trend none of the differences was significant.

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* Negative correlation is due to the inverse weighting on the BSAG i.e. a high score indicates poor adjustment.

Table 8.1 Relationship with teacher: comparison of the handicapped children with the controls.

Schools	Children	Relationship with teacher		t value
	No.	Mean	S.D.	
O.D.	38	2.95	1.72	1.92
O.D.C.	38	2.37	1.28	
S.D.	38	3.58	1.62	1.90
S.D.C.	38	2.87	1.86	
S.R.	38	3.05	1.52	1.01
S.R.C.	38	2.74	1.50	

Anxiety in the classroom

(High scores indicate low anxiety)

Comparison among handicapped children in the three types of school.

The evidence suggests that there was little difference between the three groups of handicapped children in relation to anxiety in the classroom. It was found that physically handicapped at Special Day schools considered themselves to be less anxious ($\bar{x}$ = 3.18) than did physically handicapped at either Ordinary Day ($\bar{x}$ = 2.68) or at Special Residential ($\bar{x}$ = 2.58) schools. The differences favouring the physically handicapped at SD schools were not statistically significant (F = 1.89, df 2,111).

Factors affecting anxiety in the classroom.

For the total group of handicapped children there was little or no relationship between severity of disability and anxiety in the classroom, (r = -.11).

Table 8.2 shows that for all three groups of PH children those with neurological abnormalities were more anxious about school work than those without neurological involvement. The differences between these two sub-groups were significant for the total group of children and for the children at Special Day (SD) school.

Table 8.2 'Anxiety in the classroom' in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Anxiety in the classroom		PH children without neurological abnormalities	Anxiety in the classroom		F ratio
	No.	Mean	S.D.	No	Mean	S.D.	
O.D.	24	2.58	1.28	14	2.86	.95	.48
S.D.	24	2.83	1.37	14	3.79	1.22	4.84*[1]
S.R.	22	2.32	1.70	16	2.94	1.84	1.15
All	70	2.59	1.45	44	3.18	1.42	4.54*[2]

*[1] df 1,36 p <.05, *[2] df 1,112 p <.05

Scores on the 'anxiety in the classroom' scale were related to neuroticism, social and emotional adjustment and intellectual ability. The children who showed little anxiety about school work were less neurotic (r = -.36, df 112, p <.001), better socially adjusted (r = .29, df 112,

$p < .01$) and emotionally adjusted ($r = .36$, df 112, $p < .001$) than were children who displayed anxiety in the classroom. Table 8.3 illustrated the relationship between anxiety in the classroom and the intellectual level of the 114 physically handicapped children. It can be seen that bright children considered themselves less anxious in the classroom than did the dull children.

Table 8.3 Anxiety in the classroom and intellectual ability in PH children.

Intellectual ability	PH children	Anxiety in the classroom		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	43	3.30	1.21	
Average	51	2.57	1.55	4.14*
Below average	20	2.40	1.50	
Total number of children	114	2.82	1.46	
Verbal				
Above average	40	3.40	1.08	
Average	39	2.51	1.47	5.31**
Below average	35	2.49	1.65	
Total number of children	114	2.82	1.46	

df 2,111 *$p < .05$; **$p < .01$

A significant interaction was found between sex and type of school attended in relation to anxiety in class ($F = 3.44$, df 2,108, $p < .05$). Boys were less anxious than girls in the special schools (both day and residential) but not in the ordinary day schools. Differences between sexes were significant for the Residential Special group only ($F = 7.74$, df 1,36, $p < .01$).

Comparison among control children at day and residential schools.

The results indicate that children at day schools were less anxious than were children at boarding school, the respective mean scores being 3.18 and 2.42 ($t = 2.71$, df 112, $p < .01$).

Factors affecting anxiety in the classroom.

As might have been predicted the children who scored low on theJEPI neuroticism scale and high on the CTP emotional adjustment component tended not to be anxious about school work. The respective correlation coefficients were -.24 (df 112, $p < .01$) and .23 (df 112, $p < .01$).

Differences of statistical significance were not found between the sexes in relation to classroom anxiety. Boys, however, at both day and boarding schools had higher mean scores (i.e. less anxiety)than girls.

Comparison of handicapped children with their controls.

Control children in Ordinary Day schools were less anxious than their disabled peers whilst the control children for both the Special Day and Special Residential groups obtained lower scores indicating greater anxiety than the PH children. Table 8.4 shows, however, the differences among the means were small and none reached significance.

Table 8.4 Anxiety in the classroom: PH and control children.

Schools	Children	Anxiety in the classroom		t value
	No.	Mean	S.D.	
O.D.	38	2.68	1.17	-1.64
O.D.C.	38	3.26	1.50	
S.D.	38	3.18	1.35	.23
S.D.C.	38	3.11	1.43	
S.R.	38	2.58	1.77	.48
S.R.C.	38	2.42	1.33	

Academic self-image

(High score implies 'good' self-image)

Comparison among handicapped children at the three types of school.

The academic self-image scale did not produce any significant differences among children at the different

types of school. The highest mean score (10.79) was obtained by the SD group, followed by the SR group (10.05), and then by the OD group (9.76).

Factors affecting academic self-image.

Children with a moderate or severe handicap had a poorer academic self-image than those with a mild disability. The respective mean scores were 9.37 and 10.83. The difference between the means resulted in an F ratio of 6.27 which was significant at the .05 level (df 1,112).

Table 8.5 shows that children who were neurologically normal had better self-images than those who had neurological abnormalities. None of the differences in the three types of schools was, however, significant.

Table 8.5 Academic self-image in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Academic self-image		Ph children without neurological abnormalities	Academic self-image		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	9.58	3.72	14	10.07	2.99	.17
S.D.	24	10.50	2.45	14	11.29	2.67	.85
S.R.	22	9.41	3.28	16	10.94	3.53	1.89
All	70	9.84	3.18	44	10.77	3.08	2.37

Handicapped children who scored highly on the academic self-image scale tended to produce low scores on Eysenck's neuroticism scale ($r = -.30$, df 112, $p < .01$) and high scores on the extraversion component ($r = .25$, df 112, $p < .01$). In addition overall adjustment (C.T.P.) was found to have some connection with academic self-image ($r = .23$, df 112, $p < .01$), the better adjusted children having the higher academic self-image.

Significant differences were found in relation to the level of non-verbal intellectual ability ($F = 3.93$, df 2,111, $p < .05$). The respective mean score for children who were of above average, average and below average intelligence were 11.02, 10.10 and 8.70 respectively. Verbal ability was also related to academic self-image ($r = .18$, df 112, $p < .05$). There was, however, little difference in the mean scores for children of average and below average verbal ability.

Sex differences of statistical significance were not found on the academic self-image scale. See Appendix D Table 1 for more detailed results.

Comparison among control children at day and residential schools.

The academic self-image was not significantly different for children at day and at boarding schools. The respective means were 10.39 and 10.29 ($t = 0.16$, df 112).

Factors affecting the academic self-image.

Significant differences between the sexes were found. The boys had a more positive self-image than had the girls ($F = 11.03$, df 1,112, $p < .01$). Sex and type of school attended gave rise to a significant interaction ($F = 5.50$, df 1,110, $p < .05$). From Table 8.6 it can be seen that whereas the academic self-image was more positive for the girls at day than at boarding schools the opposite was true for the boys.

Table 8.6 Sex differences in academic self-image of control children.

Sex	Day School Controls	Academic self-image		Boarding School Controls	Academic self-image	
	No.	Mean	S.D.	No.	Mean	S.D.
Girls	34	9.85	2.45	17	8.18	3.56
Boys	42	10.83	3.25	21	12.00	2.98
Total number of children	76	10.40	2.94	38	10.29	3.74

Academic self-image was found to be related to neuroticism (JEPI) extraversion (JEPI) and total adjustment (C.T.P.). The children with a good self-image tended to score high on the extraversion scale ($r = .30$, df 112, $p < .001$), low on the neuroticism component ($r = -.34$, df 112, $p < .001$) and high on social and emotional adjustment, the correlation coefficient with total adjustment being .36

(df 112, $p < .001$).

Comparison of handicapped children with their controls.

Little difference was observed in the academic self-image of the handicapped children and their controls in the different types of school. Table 8.7 shows that the controls consistently scored slightly higher.

Table 8.7 Academic self-image: PH and control children.

Schools	Children	Academic self-image		t value
	No.	Mean	S.D.	
O.D.	38	9.76	3.44	-0.17
O.D.C.	38	9.87	2.54	
S.D.	38	10.79	2.53	-0.19
S.D.C.	38	10.92	3.25	
S.R.	38	10.05	3.42	-0.30
S.R.C.	38	10.29	3.74	

Social adjustment/getting on well with classmates

(High score indicates 'good' adjustment)

Comparison among handicapped children at three types of school.

On this scale there was a lack of significant differences between the different physically handicapped groups. Children at Special Day schools had the highest mean score (3.24) then those at Special Residential schools

(3.18) and lastly by children at Ordinary Day schools (3.08).

Factors affecting social adjustment.

Severity of disability did not show any significant relationship with social adjustment (r = .11, df 112). Table 8.8 shows that with the exception of the children at OD schools all the children who were neurologically abnormal had a higher average on the social adjustment scale than had neurologically normal children. None of the differences among the two sub-groups shown in Table 8.8 was statistically significant.

Table 8.8 Social adjustment in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Social adjustment		PH children without neurological abnormalities	Social adjustment		F ratio
	No	Mean	S.D.	No	Mean	S.D.	
O.D.	24	3.00	1.32	14	3.21	1.37	.23
S.D.	24	3.42	1.18	14	2.93	1.39	1.34
S.R.	22	3.50	1.30	16	2.75	1.24	3.21
All	70	3.30	1.27	44	2.96	1.31	1.96

Sex differences in social adjustment though not of statistical significance, were consistent for the three types of school. The boys rated themselves as getting on better with their classmates than did the girls. (See

Appendix D Table 1 for more detailed results).

For the total group of children an association was found between social adjustment and extraversion ($r = .24$, df 112, $p < .01$), that is the more extraverted children produced higher social adjustment scores. A low but significant positive correlation was found between the present social adjustment scale and the social adjustment component of the California Test of Personality ($r = .21$, df 112, $p < .05$). On the other hand in relation to the O.D. group a relationship was not found between the children's own views as reflected on the present scale and the views expressed by the classmates on the social discrimination test.

The relationship between social adjustment and intellectual ability was not a linear one. Significant differences were, however, found in children of different verbal abilities ($F = 3.63$, df 2,111, $p < .05$). The highest mean adjustment score (3.58) was obtained by the children of above average verbal ability, followed by those of below average ability (3.09) and lowest by children of average ability (2.82). In the case of non-verbal ability, no significant differences appeared.

Comparison among control children at day and residential schools.

Little difference was noted in the social adjustment scores of children in the day and the boarding

schools the mean scores being 2.76 and 2.92 respectively ($t = 0.64$, df 112).

Factors affecting social adjustment.

Sex differences of statistical significance occurred only among the day school children ($F = 4.09$, df 1,74, $p < .05$). The boys viewed themselves as being of better social adjustment than the girls. The respective means were 3.02 and 2.44.

Social adjustment and intellectual ability both verbal and non-verbal were related for the total group of children. The Pearson correlation coefficients were 0.25 and 0.24 respectively, both being significant at the 0.01 level. A breakdown of scores for the different levels of intellectual ability yielded significant differences for verbal ability only. Reference to Table 8.9 shows that in the case of the controls the trend was a linear one with the above average in verbal ability having the highest social adjustment score, followed by those of 'average' and then 'below average' verbal ability.

A correlation coefficient of .35 (df 112, $p < .001$) was found between the present social adjustment scale and the social adjustment component of the California Test of Personality. Of note, a correlation was not found between the children's own views about 'getting on well with the classmates' and their 'classmates' perception of the children's social acceptability.

Table 8.9 Social adjustment/getting on well with classmates and verbal ability in control children.

Intellectual ability	Controls	Social Adjustment		F ratio
	No.	Mean	S.D.	
Above average	66	3.05	1.16	
Average	40	2.73	1.22	7.52***
Below average	8	1.38	.92	
Total number of children	114	2.82	1.23	

df 2,111 ***p $<$.001

Comparison of handicapped children with their controls.

The handicapped children in all the three types of school believed themselves to be better adjusted socially than the controls. None of the differences among the three sets was, however, statistically significant (Table 8.10).

Table 8.10 Social adjustment/getting on well with classmates: PH and control children.

Schools	Children	Social adjustment		t value
	No.	Mean	S.D.	
O.D.	38	3.08	1.32	1.57
O.D.C.	38	2.68	1.23	
S.D.	38	3.24	1.26	1.64
S.D.C.	38	2.84	1.33	
S.R.	38	3.18	1.31	.93
S.R.C.	38	2.92	1.15	

Part II - School Related Attitudes

Importance of doing well at school

(High score indicates the importance of doing well)

Comparison among PH children at the three types of school.

A comparison of the scores on the 'Importance of Doing Well' scale yielded no statistically significant differences among children attending different types of school ($F = 2.22$, df 2,111). The highest mean score (7.76) was obtained by those at special residential schools followed by those attending special day schools (7.26) and finally by children at ordinary day schools (6.79).

Factors affecting importance of doing well.

Severity of disability had no effect on the importance of doing well. However, a small relationship was found between this measure and visibility of disability ($r = .19$, df 112, $p < .05$) those children with the very obvious handicaps placing the greater importance on doing well. The presence or absence of neurological abnormalities had different though not significant effects on the children depending on type of school attended. The neurologically normal children in ordinary day schools placed more emphasis on doing well than did neurologically abnormal children. This tendency was reversed in the case of those at special schools, both day and residential.

Table 8.11 Importance of doing well for children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Importance of doing well		PH children without neurological abnormalities	Importance of doing well		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	6.46	2.06	14	7.36	1.82	1.82
S.D.	24	7.38	2.04	14	7.07	2.24	.18
S.R.	22	7.90	1.74	16	7.56	2.25	.29
Total No. of children	70	7.22	2.02	44	7.34	2.08	.08

Sex differences were minimal: girls consistently placed slightly more emphasis on doing well in school than did boys. A low positive but significant correlation was noted between the present scale and total adjustment ($r = .21$, df 112, $p < .05$). The trend was for the better adjusted children to place emphasis on doing well at school. No significant relationship was detected between importance of doing well and intellectual ability.

Comparison among control children at day and residential schools.

The controls at boarding school tended to place more importance on doing well at school than did children at ordinary day schools, but the respective mean scores of 8.11 and 7.76 were not significantly different ($t = 1.10$, df 112).

Factors affecting importance of doing well.

The importance of doing well for the total group of children showed some dependency on social class ($r = -.25$, df 112, $p < .01$, with the upper classes scoring higher) and on environmental home circumstances ($r = -.23$, df 112, $p < .01$, with 'good' environment going with high scores). Relationships were also found between the present scale and certain personality and adjustment measures. Children who tended to score high on the present scale were more likely than those with low scores to have scored low on the JEPI neuroticism scale ($r = -.23$, df 112, $p < .01$) high on the JEPI lie factor ($r = .23$, df 112, $p < .01$), high on the CTP's total adjustment factor ($r = .22$, df 112, $p < .05$) and high on its constituent, emotional adjustment ($r = .22$, df 112, $p < .05$). Verbal ability also showed some relationship to the present scale ($r = .24$, df 112, $p < .01$), that is the brighter children expressed greater emphasis on doing well at school.

Girls at both day and boarding schools placed greater emphasis on the importance of doing well than did boys. The differences between the sexes were, however, significant only for the total group of children ($F = 4.42$, df 1,112, $p < .05$).

Comparison of handicapped children with their controls.

Control children tended to place greater importance on doing well at school. Table 8.12 shows the

differences to be most marked for children attending ordinary day schools.

Table 8.12 Importance of doing well in handicapped children and their controls.

Schools	Children	Importance of doing well		t value
	No.	Mean	S.D.	
O.D.	38	6.79	2.00	-2.71**
O.D.C.	38	7.82	1.43	
S.D.	38	7.26	2.09	1.02
S.D.C.	38	7.71	1.81	
S.R.	38	7.76	1.95	-0.91
S.R.C.	38	8.11	1.45	

df 37, **p $<$.01

Attitudes to school

(High score indicates a positive attitude)

Comparison among handicapped children at the three types of school.

The highest mean score (4.03) was obtained by children at Special Day schools, next by those at Ordinary Day schools (3.89) and followed by children at Special Residential schools (3.79). The differences between these means were, however, nonsignificant (F = .20, df 2,111).

Factors affecting attitude to school.

Severity of disability had little effect on

attitudes to school (r = -.12, df 112). Differences in attitude were noticed for children with and without neurological abnormalities. Table 8.13 shows that in all schools children without neurological abnormalities expressed the more favourable attitudes. However, none of the differences between any of the sub-groups reached statistical significance.

Table 8.13 Attitude to school in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Attitude to school		PH children without neurological abnormalities	Attitude to school		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	3.83	1.88	14	4.00	1.18	.09
S.D.	24	3.92	1.67	14	4.21	1.53	.30
S.R.	22	3.41	1.74	16	4.31	1.49	2.81
Total number of children	70	3.73	1.75	44	4.18	1.39	2.11

With the exception of the children at residential special schools, the girls obtained the higher mean scores. The difference between sexes was most marked for children at Special Day schools and this was the only difference to reach significance ($F = 5.13$, df 1,36, $p < .05$).

The children who tended to score high on the present scale were more likely when compared with those with low scores to have scored a) low on the JEPI

neuroticism scale ($r = -.24$, df 112, $p < .01$), b) high on the JEPI lie factor ($r = .21$, df 112, $p < .05$) c) high on the CTP's total adjustment factor ($r = .21$, df 112, $p < .05$) and d) high on its component social adjustment ($r = .24$, df 112, $p < .05$).

Comparison among control children at day and residential schools.

Attitudes to school were not significantly different for children attending day or boarding schools ($t = -1.05$, df 112), the boarding school children had a slightly higher mean score.

Significant sex differences were found for the total group of children ($F = 4.37$, df 1,112, $p < .05$), the girls having the more favourable attitudes to school. This difference between the sexes was found in both day and boarding schools.

Some of the variance in attitudes to school was explained by the age of the children (Eta squared = .05): the highest mean score (4.03) was obtained by the nine-year olds followed by the ten-year olds (3.91) and then by the eleven year olds (3.29). The Pearson r between age and attitude to school was .21 for the total group (df 112, $p < .05$).

A small positive but significant correlation was found between the teachers' assessments of the children's adjustment (BSAG) and the children's attitudes to school

($r = -.19$, df 112, $p < .05$) those children judged best adjusted having the more favourable attitude. Associations between the present scale and the children's own personality assessments were also noted. A correlation coefficient of 0.23 was found between attitude to school and total adjustment (df 112, $p < .01$) and .26 between the former and social adjustment (CTP (df 112, $p < .01$)); the better adjusted children held the more favourable attitudes.

Comparison of handicapped children with their controls.

Differences of statistical significance in the attitudes to school were not found between disabled children and their controls (Table 8.14).

Table 8.14 Attitude to school: PH and control children.

Schools	Children	Attitude to school		t value
	No.	Mean	S.D.	
O.D.	38	3.89	1.64	1.11
O.D.C.	38	3.58	1.73	
S.D.	38	4.03	1.60	1.22
S.D.C.	38	3.61	1.59	
S.R.	38	3.79	1.68	-0.39
S.R.C.	38	3.92	1.40	

Interest in school work

(High score indicates great interest)

Comparison among PH children at three types of school.

Differences which arose between children at the three different types of school in relation to their expressed interest in school work were not significant. The highest mean score (3.50) was obtained by children at Special Day schools, followed by those at Special Residential schools (3.34) and lastly by those at Ordinary Day schools (3.29).

Factors affecting interest in school work.

For the total group of children there was a low but significant correlation between interest in school work and severity of disability ($r = -.25$, df 112, $p < .01$). The trend was for children with mild handicaps to show more interest in school work than for children whose disability was moderate or severe.

The presence or absence of neurological abnormalities did not significantly affect interest in school work. The findings, however, were consistent among the sub-groups in each type of school. See Table 8.15.

Table 8.15 Interest in school work in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Interest in school work		PH children without neurological abnormalities	Interest in school work		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	3.08	1.38	14	3.64	1.28	1.53
S.D.	24	3.29	1.85	14	3.86	1.29	1.01
S.R.	22	3.09	1.63	16	3.69	1.45	1.36
Total no. of children	70	3.16	1.61	44	3.73	1.32	3.87

Girls in the various types of school expressed greater interest in school work than did boys; however, none of the differences between the sexes was significant.

It was not unexpected to find that brighter children were more likely than the duller ones to express interest in their school work. However, this finding was only true in the case of non-verbal intelligence and was complicated by the fact that the highest scores (mean 3.59) were obtained by the children of average non-verbal ability. The above average children obtained a mean of 3.56 while the dull children obtained one of 2.45. The differences among these means were significant with an F of 4.79 (df 2,111, $p < .01$).

A low but significant correlation was noted between the children's interest in their school work and neuroticism ($r = -.21$*, df 112, $p < .01$), i.e. the trend was

* The negative value of the Pearson r is due to the inverse weighting on neuroticism, i.e. a high score indicates emotional instability.

for stable children to show the greater interest in school work.

The relationships found between the present scale and total adjustment on the California Test of Personality ($r = .26$, df 112, $p < .01$) and its component parts social adjustment ($r = .25$, df 112, $p < .01$) and emotional adjustment ($r = .22$, df 112, $p < .01$) confirmed that the greater interest in school work was shown by the well-adjusted children.

Comparison among control children at day and residential schools.

Difference of statistical significance was not found between children at day or boarding schools in relation to their interest in school work. The respective mean scores were 3.26 and 3.18 ($t = 0.29$, df 112).

Girls in both day and boarding schools obtained higher mean scores on the present scale than did boys; the differences between sexes were, however, significant only for the total group of children ($F = 4.32$, df 1,112, $p < .05$).

Children who expressed greater interest in school work were more likely to assess themselves as being better adjusted than were those showing little interest in school work. See Table 8.16 for the correlations with other personality factors. Intellectual ability whether classified verbally or non-verbally did not show any

significant relationship with the present scale.

Table 8.16 Pearson correlation coefficients between interest in school work and personality factors for control children.

Factors	Correlations with interest in school work
Neuroticism[1] (J.E.P.I.)	-.19*
Lying (J.E.P.I.)	.24**
Social adjustment (C.T.P.)	.24**
Emotional adjustment (C.T.P.)	.21*
Total adjustment (C.T.P.)	.24**

df 112; *p < .05 **p < .01

[1] negative value is due to inverse weighting on this factor, i.e. high score indicates emotional instability.

Comparison between handicapped children and their controls.

The handicapped children at special schools (both day and residential) had the higher mean scores, a tendency which was reversed for children at Ordinary Day schools. Table 8.17 shows that none of the differences between the handicapped and control children was significant.

Table 8.17 Interest in school work: PH and control children.

Schools	Children	interest in school work		t value
	No.	Mean	S.D.	
O.D.	38	3.29	1.35	-0.37
O.D.C.	38	3.39	1.35	
S.D.	38	3.50	1.67	1.00
S.D.C.	38	3.13	1.55	
S.R.	38	3.34	1.56	.50
S.R.C.	38	3.18	1.23	

Attitude to class

(High score indicates favourable attitude to class)

Comparison among PH children at three types of school.

The results indicated a tendency for the children at Ordinary Day schools to be more satisfied with their class than the children at either Day or Residential Special schools, the mean scores being 12.89, 12.76 and 11.74 respectively. The differences among these means were nonsignificant ($F = 1.50$, df 2,111).

Factors affecting attitude to class.

No differences of statistical significance were evident in relation to the children's sex, severity of handicap, the presence or absence of neurological abnormalities, adjustment or intellectual ability.

Comparison among control children at day and residential schools.

Day school children tended to view their class more favourably than did those children at boarding schools. The respective mean scores of 12.57 and 11.50 failed, however, to reach statistical significance ($t = 1.83$, df 112).

The data indicated that girls expressed significantly more favourable attitudes towards their class than did boys ($F = 4.89$, df 1,112, $p < .05$).

Table 8.18 shows that the sex differences in attitude to class which favoured the girls applied to both day and boarding school pupils, although these reached statistical significance only for the children at day schools.

Table 8.18 Sex differences in attitudes to class of control children.

Schools	Females	Attitude to class		Males	Attitude to class		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
Day	34	13.38	2.12	42	11.91	3.33	5.03*[1]
Boarding	17	11.98	3.26	21	11.19	2.71	.52
Total number of children	51	12.88	2.62	63	11.67	3.14	4.89*[2]

*[1] df 1,74; $p < .05$ *[2] df 1,112, $p < .05$

There was a slight tendency for a child's attitude towards his class to be related to both his own and his teachers assessments of his social adjustment. The Pearson

correlation coefficients (-.19 and .21) were significant at the .05 level (df 112).

Comparison of handicapped children with their controls.

Table 8.19 shows that in each type of school, the physically handicapped children obtained the higher mean scores and had the more favourable attitudes to class. However, none of the differences between the handicapped children and their controls was significant.

Table 8.19 Attitude to class: PH and control children.

Schools	Children	Attitude to class		t
	No.	Mean	S.D.	value
O.D.	38	12.89	2.74	.04
O.D.C.	38	12.87	2.84	
S.D.	38	12.76	3.23	.76
S.D.C.	38	12.26	3.03	
S.R.	38	11.74	3.56	.29
S.R.C.	38	11.50	2.95	

'Other'image of class

(High score indicates a good 'other' image of class)

Comparison among PH children at three types of school.

The findings indicated that the type of school organization was an important factor in determining 'other'

image of a handicapped child's class. The highest mean score (4.21) was obtained by children at Special Day schools, followed by children at Special Residential school (3.74) and finally by those at Ordinary Day school (3.39). These differences were significant at the .01 level ($F = 6.17$, df 2,111). When these means were subjected to Scheffé's Range Test it was found that children at Special Day schools differed significantly in the attitudes as compared with the physically handicapped children at Ordinary Day schools at the .05 level.

Factors affecting other image of class.

Children with impaired hand control were found to have a significantly better 'other'image of class than did those with impaired mobility. The respective means were 4.22 and 3.68 ($t = 2.01$, df 107, $p < .05$).

Neither severity of handicap, the presence or absence of neurological abnormalities nor any of the demographic details of the sample, showed any relationship with the present scale. Neuroticism, however, was found to correlate -.27 with 'other' image of class (df 112, $p < .01$), i.e. those with positive attitudes tended to be emotionally more stable. Total adjustment and its component parts social and emotional adjustment also showed some relationship to the present scale. The respective correlation coefficients of .24, .24 and .24 were all significant at the .01 level (df 112). It appears from

these results that the better adjusted children held more favourable 'other' image of class.

Comparison among control children at day and residential schools.

Minimal differences were found between day and boarding school pupils, the means being 3.33 and 3.39 ($t = -0.26$, df 112).

Factors affecting 'other' image of class.

Girls had a significantly better 'other' image of their class than had boys in both day school ($F = 2.05$, df 1,74; $p < .01$) and boarding school ($F = 16.80$, df 1,36; $p < .001$). The difference between the sexes for the total group of children was significant at well beyond the .001 level ($F = 19.48$, df 1,112).

Some association was detected between 'other' image of class and social class ($r = -.20$, df 112, $p < .05$), the upper classes scoring higher. Overall adjustment and social adjustment (CTP) also showed some relationship with the present scale. The respective Pearson correlation coefficients of .24 and .26 were significant at .01 level.

Comparison of handicapped children and their controls.

A comparison of the scores showed that the PH children in each type of school obtained a higher mean score than normal control children. Table 8.20 shows that

the differences were significant only between the physically handicapped at Special Day schools and their controls.

Table 8.20 'Other' image of class: PH and control children.

Schools	Children	Other image of class		t value
	No.	Mean	S.D.	
O.D.	38	3.39	.97	.43
O.D.C.	38	3.29	1.16	
S.D.	38	4.21	.96	3.08**
S.D.C.	38	3.37	1.34	
S.R.	38	3.74	1.11	1.25
S.R.C.	38	3.39	1.26	

df 37 **p <.01

Conforming behaviour

(High score implies conforming behaviour)

Comparison among PH children at three types of school.

No significant differences were found between the handicapped children in the different school organizations in relation to their conforming behaviour. The mean scores for children at Special Day schools and at Special Residential schools were the same, i.e. 3.66. Children at Ordinary Day school obtained a mean score of 3.13.

Factors affecting conforming behaviour.

There was a trend although not a statistically significant one for the neurologically abnormal children in each type of school to conform better than their neurologically normal peers (Table 8.21).

Table 8.21 Conforming behaviour in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Conforming behaviour		PH children without neurological abnormalities	Conforming behaviour		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	3.29	1.63	14	2.86	1.23	.75
S.D.	24	3.71	.91	14	3.57	1.28	.15
S.R.	22	3.82	1.01	16	3.44	.81	1.55
Total No. of children	70	3.60	1.23	44	3.30	1.13	1.75

Scores on the present scale were related to scores on the JEPI lie scale ($r = .35$, df 1,112, $p < .001$) i.e. those with high 'L' scores were the more conforming. Of note there was a small nonsignificant trend for the youngest children to be more conforming than the older children.

Comparison among control children at day and residential schools.

Day school children obtained a higher mean score (3.24) than those at boarding school (2.87). The differences

between the means was not significant (t = 1.72, df 112).

Factors affecting conforming behaviour.

A correlation of -.24 was found between age of the children and the present scale. Breaking down the scores by age showed the nine-year-olds to have the highest mean score (3.32) followed by the ten-year-olds (3.28) and lastly by the eleven-year-olds (2.82). The differences between the means for the three age groups were not significant (F = 2.78, Eta squared .05).

A very low but significant negative correlation was found between extraversion and the present scale (t = -.18, df 112, $p < .05$) i.e. the more introverted were the more conforming. A correlation coefficient, however, of .47 (df 112, $p < .001$) was noted between the Lie Scale (JEPI) and conformity. There was a trend, therefore, among the control children as among the physically handicapped children for those with high 'L' scores to show the more conforming behaviour.

Comparison of handicapped children with their controls.

Reference to Table 8.22 shows that physically handicapped children at Special Day and residential schools obtained higher mean scores than did controls, the differences between the means being significant for the children at SR schools only. In the case of the children at Ordinary Day schools, handicapped children were slightly less conforming than were their normal peers.

Table 8.22 Conforming behaviour: PH and control children.

Schools	Children	Conforming behaviour		t value
	No.	Mean	S.D.	
O.D.	38	3.13	1.49	-.30
O.D.C.	38	3.21	.91	
S.D.	38	3.66	1.05	1.49
S.D.C.	38	3.26	1.11	
S.R.	38	3.66	.94	3.58***
S.R.C.	38	2.87	1.21	

df 37, ***p $<$.001

CHAPTER 9

SCHOOL ATTAINMENT

In this chapter, attainment in reading and arithmetic is examined. Vernon's Graded Word Reading Test (page 76) and the WISC Arithmetic Sub-Scale (page 77) were employed for this purpose.

The results from the reading test are examined in terms of reading quotients while those from the arithmetical test are analysed in terms of standard scores. The presentation of results takes the same format as the earlier chapters.

The purpose of the present analysis is to determine the effects of type of school on children's school attainment and it's relationship to adjustment. Other characteristics which might influence academic attainment are also explored in an attempt to elucidate factors which facilitate children in achieving their potential.

Reading

Comparison among PH children at the three types of school.

The results indicated that type of school organization was an important factor in determining the reading attainment of a handicapped child.

The disabled children at Ordinary Day schools attained the highest mean reading quotient (104.53), followed by those at Special Residential schools (90.21) and lastly by those at Special Day schools (86.82). The differences between these means were significant at the .01 level ($F = 6.50$, df 2,111). When the means were subjected to Scheffé's range test it was found that the OD group differed from the SD group at the .01 significance level and from the SR group at the .05 significance level.

An almost similar pattern of results was obtained with regard to the teachers' assessments of reading ability. The differences in reading ability among children in the different types of school were significant ($x^2 = 9.93$, df 4, $p < .05$). Table 9.1 shows that children at Special Day schools had better reading ability than had children at Special Residential schools. The results of the objective testing, however, indicated that the SR group were more adept at reading than the SD group. The differences between the special school groups were not significant, when the results of either the teachers' assessments or the objective testing were taken into consideration. Of note, for the total group of children the teachers' assessments and the objective testing of reading ability correlated positively and significantly ($r = 0.71$, df 112, $p < .001$). The negative value of the Pearson r is due to the inverse weighting on the

teachers assessment scale.

Table 9.1 Reading attainment and teachers' assessments of PH children.

Schools	Teachers' assessments: Good No.	Good %	Average No.	Average %	Poor No.	Poor %	Total
O.D.	19	50.0	13	34.2	6	15.8	38
S.D.	11	28.9	13	34.2	14	36.8	38
S.R.	11	28.9	9	23.7	18	47.4	38
Total number of children	41	36.0	35	30.7	38	33.3	114

Factors affecting reading attainment.

Reading ability for the total group of physically handicapped children correlated .54 (df 112, $p < .001$) with non-verbal intellectual ability. Table 9.2 illustrates the mean reading quotients for the different levels of intellectual ability, both verbal and non-verbal. It was found that 27 per cent of the variance in reading ability could be explained by the non-verbal intellectual ability of the children and 45 per cent of the variance by verbal intellectual ability.

Table 9.2 Reading attainment and intellectual ability in PH children.

Intellectual ability	PH Children	Reading attainment		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	43	107.81	23.43	
Average	50	90.28	20.09	20.85***
Below average	21	73.76	13.68	
Verbal				
Above average	40	111.75	21.91	
Average	39	94.74	15.96	45.74***
Below average	35	72.40	14.06	

df 2,111 p <.001

Significant differences were not found in reading ability when the severity of disability, the visual impact of handicap, or the major functional effect of the impairment were taken into consideration.

Table 9.3, however, shows that the presence or absence of neurological abnormalities affected reading attainment. The differences between the two sub-groups, although significant for the total group of children was only statistically significant for children attending Special Residential schools. There was no difference in reading ability of children with unilateral and bilateral brain lesions at ordinary day schools. ($t = -0.808$, df 22). Due to sample characteristics (Table 4.25) similar statistics was not carried out on the children attending special schools.

Table 9.3 Reading attainment in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Reading quotients		PH children without neurological abnormalities	Reading quotients		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	101.46	22.46	14	109.79	22.51	1.21
S.D.	24	85.00	21.76	14	89.93	24.81	.41
S.R.	22	81.91	24.07	16	101.63	16.14	8.06**
Total number of children	70	89.67	24.03	44	100.50	22.14	5.83*

*df 1,112, $p < .05$; **df 1,36, $p < .01$

Table 9.4 shows the teachers' assessments of the children's reading ability as determined by the presence or absence of neurological abnormalities.

It was found that the teachers did not show a significant difference in the distribution of their ratings of children with and without neurological abnormalities. ($x^2 = 3.65$, df 2).

Table 9.4 Teachers' assessments of reading ability in children with and without neurological abnormalities.

Group	Reading Attainments: Good No.	Good %	Average No.	Average %	Poor No.	Poor %	Total
PH children with neurological abnormalities	23	32.9	19	27.1	28	40.0	70
PH children without neurological abnormalities	18	40.9	16	36.4	10	22.7	44
Total number of children	41	36.0	35	30.7	38	33.3	114

The differences in reading attainment between children with and without neurological abnormalities were not unexpected in view of their intellectual differences. From Table 9.5 it can be seen that the total group of children with neurological abnormalities were significantly of lower intellect (at the 0.001 level) than children without neurological abnormalities. Although this same trend was apparent in each of the three types of school it failed to reach significance at the Special Day and Residential schools.

Table 9.6 shows that the presence or absence of neurological abnormalities had a less marked effect on verbal than on non-verbal intelligence. The differences

between the two groups were statistically significant only for the children at Special Residential school.

Table 9.5 Mean standardized scores of PH children with and without neurological abnormalities for non-verbal intelligence (Raven's Matrices).

Schools	PH children with neurological abnormalities	Non-verbal intelligence		PH children without neurological abnormalities	Non-verbal intelligence		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	99.38	14.44	14	110.50	13.59	5.84*
S.D.	24	101.46	13.44	14	110.00	15.08	3.27
S.R.	22	102.05	13.40	16	106.69	13.54	1.10
All	70	100.93	13.63	44	108.96	13.84	9.26***

*df 1,36, p <.05; ***df 1,112, p <.001

Table 9.6 Mean standardized scores of PH children with and without neurological abnormalities for verbal intelligence (Crichton & Mill Hill Vocabulary).

Schools	PH children with neurological abnormalities	Verbal intelligence		PH children without neurological abnormalities	Verbal intelligence		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	103.54	17.91	14	106.71	14.82	.31
S.D.	24	100.54	15.32	14	98.93	12.16	.11
S.R.	22	92.27	14.09	16	103.19	11.68	6.39*
All	70	98.97	16.37	44	102.96	12.98	1.87

*df 1,36, p <.05

Owing to the differences found in intellectual ability of the children with and without neurological abnormalities, it was decided to partial out the effects of intelligence by means of the analysis of covariance and then to examine the differences in attainment.

Table 9.7 shows the mean reading quotients for the total group of children with and without neurological abnormalities before and after adjustment according to non-verbal intelligence.

Table 9.7 Mean reading quotients of PH children before and after adjustment of scores according to non-verbal intelligence.

Group	PH Children No.	Mean Non-verbal IQ	Mean reading quotient before adjusting	Adjusted mean reading quotient
PH children with neurological abnormalities	70	100.93	89.67	92.37
PH children without neurological abnormalities	44	108.96	100.50	96.85

Before the mean reading quotients were adjusted, the neurologically abnormal group had a mean score (89.67) which was significantly poorer (see Table 9.3) than the neurologically normal group. When non-verbal intelligence

was taken into account (Table 9.7) the difference was reduced and is no longer statistically significant (F = .90, df 1,111, N.S.).

The additive effect of the neurological factor and the covariates non-verbal intelligence explained 30 per cent of the variation in reading ability.

Table 9.8 Mean reading quotients of PH children at O.D. schools before and after adjustment of scores according to non-verbal intelligence.

Group	PH Children No.	Mean Non-verbal IQ	Mean reading quotient before adjusting	Adjusted mean reading quotient
PH children with neurological abnormalities	24	99.38	101.46	106.14
PH children without neurological abnormalities	14	110.50	109.79	101.76

From Table 9.8 the improvements in reading quotients of the neurologically abnormal group in the O.D. schools can be seen when the covariate was controlled. None of the differences in the adjusted scores between the neurologically normal and abnormal groups was statistically significant.

When verbal intelligence was taken into account in the case of children at Special Residential schools, the difference in the adjusted scores between the neurologically normal and abnormal groups was no longer statistically significant ($F = 1.83$, df 1,35). See Table 9.9. The additive effects of the neurological factor and the co-variate verbal intelligence explained 59 per cent of the variation in reading ability for the SR group.

Table 9.9 Mean reading quotients of PH children at S.R. schools before and after adjustment of scores according to verbal intelligence.

Group	PH Children No.	Mean verbal IQ	Mean reading quotient before adjusting	Adjusted mean reading quotient
PH children with neurological abnormalities	22	92.27	81.91	87.14
PH children without neurological abnormalities	16	103.19	101.63	94.43

A significant interaction was found between sex and type of school ($F = 3.29$, df 2,108, $p < .05$). Reference to Table 9.10 shows that boys at OD and SR schools were better at reading than were girls. The difference between the sexes reached significance for the OD group only. The

trend was reversed in the case of the children at Special Day schools, the girls being more adept at reading than the boys.

A steady deterioration in reading attainment was found from classes I and II (professional and managerial) to class IV and V (semi-skilled and unskilled), the differences between the classes being significant. ($F = 6.47$, df 3,110, $p < .01$). See Table 9.11.

Table 9.10 Sex differences in reading attainment of PH children.

Schools	Females	Reading attainment		Males	Reading attainment		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	17	94.71	21.98	21	112.48	20.13	6.75*
S.D.	17	91.41	23.12	21	83.10	22.00	1.28
S.R.	17	89.53	21.51	21	90.76	24.76	.03
Total number of children	51	91.88	21.87	63	95.44	25.34	.63

*df 1,36, $p < .05$

Environmental home circumstances were also found to have a statistically significant effect on the children's reading attainment. Whereas children from favourable home circumstances obtained a mean reading quotient of 98.11, those from unfavourable home circumstances attained only a

mean quotient of 85.34 ($F = 7.71$, df 1,112, $p < .01$).

Table 9.11 Reading attainment and social class in PH children.

Social class	PH Children	Reading attainment	
	No.	Mean	S.D.
I + II	28	109.25	23.39
III non-manual	18	94.50	21.11
III manual	36	88.39	21.63
IV + V	32	86.16	22.53
Total number of children	114	93.85	23.81

Some association was noted between school absence and reading attainment ($r = -.22$, df 112, $p < .05$), those being most frequently absent having poorer attainment. The relationship was most marked among physically handicapped children at SR schools ($r = 0.52$, df 36, $p < .001$).

No significant trends were found after correlating the children's reading quotients with a) their attitudes to school and b) their adjustment, as assessed by themselves and by the teachers. The JEPI lie scale however correlated -.32 with reading attainment, the children with low scores on the lie scale tending to be better at reading than those with high lie scores (df 112, $p < .001$). The negative value of the Pearson r is due to the inverse

weighting of the teachers assessment scale.

Comparison among control children at day and residential schools.

Children at boarding schools were significantly better at reading than children at day schools, the respective means being 115.26 and 107.25 ($t = -2.10$, df 112, $p < .05$).

Table 9.12 shows that the teachers' assessments did not make a significant distinction between the children at either type of school. Of note for the total group of children teachers' assessments and the objective testing of reading ability correlated positively and significantly ($r = 0.50$, df 112, $p < .001$; the negative value of the Pearson r is due to the inverse weighting of the teachers' assessment scale).

Table 9.12 Reading attainment and teachers' assessments of control children.

	Reading attainment						
School	Good		Average		Poor		Total
	No.	%	No.	%	No.	%	
Day	32	42.1	31	40.8	13	17.1	76
Boarding	17	44.7	17	44.7	4	10.5	38
Total No. of children	49	43.0	48	41.1	17	14.9	114

chi square = .869, df 2, NS

Factors affecting reading attainment.

Reading attainment correlated .58 (df 112, $p < .001$) with non-verbal intellectual ability and .64 (df 112, $p < .001$) with verbal ability. The mean reading quotients for the different levels of verbal and non-verbal intelligence are given in Table 9.13.

Table 9.13 Reading attainment and intellectual ability in control children.

Intellectual ability	Controls	Reading attainment		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	48	119.67	15.30	
Average	48	105.88	12.67	22.15***
Below average	18	94.72	17.61	
Verbal				
Above average	66	117.42	15.00	
Average	40	101.40	12.46	26.58***
Below average	8	88.00	16.25	

df 2,111, $p < .001$

Owing to significant differences found in the verbal ability of children at both day and boarding schools (Table 4.17) the effects of verbal intelligence were partialled out by means of the analysis of covariance.

Reference to Table 9.14 shows that the difference in reading attainment between the children at day and residential schools was reduced as a result of the adjustment and was no longer statistically significant ($F = .92$, df 1,111).

Table 9.14 Mean reading quotients of control children before and after adjustment of scores according to verbal intelligence.

Group	Controls No.	Mean verbal IQ	Mean reading quotient before adjustment	Adjusted mean reading quotient
Day school	76	109.06	107.25	109.05
Residential school	38	115.00	115.26	111.66

Differences of statistical significance were found between the sexes in relation to reading ability. Boys attained a mean reading quotient of 115.08 compared with girls who obtained a mean quotient of 103.55 ($F = 14.20$, df 1,111, $p < .001$).

Social class had a marked effect on the reading attainment of the total group of control children ($F = 4.43$, df 3,110, $p < .01$), the trend being similar to that observed with the physically handicapped children. See Table 9.15.

Table 9.15 Reading attainment and social class in control children.

Social class	Controls	Reading quotients	
	No.	Mean	S.D.
I + II	53	115.21	15.83
III non-manual	21	107.76	15.00
III manual	23	107.48	17.51
IV + V	17	99.41	18.45
Total number of children	114	109.92	17.17

Again as with the physically handicapped children from favourable environmental home circumstances read significantly better than those from unfavourable environments. The respective mean reading quotients were 112.69 and 101.79 ($F = 9.36$, df 1,112, $p < .01$).

As before a low negative but significant correlation was found between school absence and reading attainment ($r = -.28$, df 1,112; $p < .01$).

Low positive but significant correlations were found between reading attainment and certain personality and adjustment measures.

Reference to Table 9.16 shows that children who tended to score high on the reading test were more likely than those with low scores to have a good relationship with the teacher, show little anxiety in class, be socially accepted by peers and have a good self-image. Significant

relationships with extraversion, faking good and adjustment should also be noted.

Table 9.16 Pearson correlation coefficients between reading attainments and personality and adjustment measures as assessed by the control children and their teachers.

Factors	Correlation with reading attainment
Extraversion (J.E.P.I.)	.19*
Faking good (J.E.P.I.)	.18*
Relationship with teacher (Baker Lunn)	.20*
Anxiety in class (frdm.from) (Baker Lunn)	.20*
Getting on well with classmates (Baker Lunn)	.20*
Academic self-image (Baker Lunn)	.34***
Emotional adjustment (C.T.P.)	.34***
Social adjustment (C.T.P.)	.24**
Total adjustment (C.T.P.)	.31***
Teachers' assessment of adjustment (BSAG)1	-.22*[1]

df 112, *p <.05; **p <.01; ***p <.001

[1](high score on BSAG indicates maladjustment)

Comparison of PH children with their controls.

From Table 9.17 it can be seen that differences of statistical significance were not found in the reading

attainment of physically handicapped children and their controls at ordinary day schools. Significant differences were,however,noted between handicapped children and their controls at both special day and special residential schools.

Table 9.17 Comparison on reading attainments of PH children and their controls.

Schools	Children No.	Reading quotients Mean	S.D.	F ratio(pairs)
O.D.	38	104.53	22.54	0.04
O.D.C.	38	104.37	18.57	
S.D.	38	86.82	22.59	-5.59***
S.D.C.	38	110.13	15.99	
S.R.	38	90.21	23.06	5.95***
S.R.C.	38	115.25	15.46	

df 37 ***p <.01

It must be remembered that differences were found in verbal ability between the groups SD and SDC and SR and SRC (Table 4.18). It was not unexpected, therefore, to find that the reading attainments differed significantly among those groups. When the effects of verbal ability were partialled out by means of analysis of covariance the differences between the two sets of groups reduced, the adjusted mean reading quotients for a) the SD and SDC groups being 90.86 and 106.08 respectively. The discrepancy in attainments of the SD and SDC children remained significant

($F = 17.41$, df 1,73, $p < .001$) whereas in the case of the SR and SRC pupils it was no longer of statistical significance ($F = .68$, df 1,73).

Differences were also found in non-verbal intelligence among physically handicapped children at SR and their controls. When the effects of these differences were removed, the discrepancy in reading attainment remained significant. ($F = 24.58$, df 1,73, $p < .001$).

Arithmetical ability

Comparison among PH children at the three types of school.

The type of school attended by a handicapped child was found to be an important factor in influencing his arithmetical skills.

The highest mean score (11.24) was attained by physically handicapped children at Ordinary Day schools, followed by those at Special Day schools (9.18), and then by those at Special Residential schools (8.47). These differences were significant at the .01 level ($F = 6.68$, df 1,111). When the mean arithmetical scores were subjected to Scheffé's range test the children at OD schools were found to differ significantly from those at SR schools at the .01 level as well as from those at SD schools at the .05 level.

A similar pattern of results was found in relation to the teachers' assessments of the children's mathematical skills. Table 9.23 suggests, however that the SR group were slightly better at arithmetic than were the SD group. Of note, teachers' assessment and the objective testing of arithmetical skills correlated positively ($r = -0.72$, df 112, $p < .001$). The negative Pearson r value is due to the inverse weighting on the teachers' assessment scale.

Table 9.18 Teachers' assessments of mathematical skills and of PH children.

Mathematical Skills

Schools	Good		Average		Poor		Total
	No.	%	No.	%	No.	%	
O.D.	9	23.7	17	44.7	12	31.6	38
S.D.	4	10.5	10	26.3	24	63.2	38
S.R.	9	23.7	6	15.8	23	60.5	38
Total No. of children	22	19.3	33	28.9	59	51.8	114

chi square = 12.42, df 4, $p < .05$

Factors affecting arithmetical attainment.

Severity of disability was not a significant factor affecting the arithmetical skills of physically handicapped children. A mean arithmetical score of 10.05 was obtained by children with mild handicaps and a mean score of 9.08 was attained by those with moderate or severe disabilities ($t = 1.43$, df 112). There were no significant differences in arithmetical attainment between the neurologically normal and the abnormal children (Table 9.19).*

In contrast an examination of the teachers' assessments of the children's mathematical skills showed a significant difference in the distribution of their ratings between those with and without neurological abnormalities ($x^2 = 8.21$, df 3, $p < .05$). See Table 9.20 where it will be noted that the teachers distributed estimates of

* There was no difference in arithmetical skills of children with unilateral and bilateral brain lesions at ordinary day schools ($t = 0.356$, df 22). Due to sample characteristics (Table 4.25) similar statistics was not carried out on the children attending special schools.

mathematical ability fairly evenly among the neurologically normal children while they stressed the lack of skill of the neurologically abnormal.

Table 9.19 Arithmetical skills in children with and without neurological abnormalities.

Schools	PH children with neurological abnormalities	Arithmetical skills		PH children without neurological abnormalities	Arithmetical skills		F ratio
	No.	Mean	S.D.	No.	Mean	S.D.	
O.D.	24	11.00	3.43	14	11.64	4.05	.27
S.D.	24	8.96	3.03	14	9.57	3.82	.30
S.R.	22	7.86	3.63	16	9.31	2.73	1.80
All	70	9.31	3.57	44	10.14	3.61	1.42

Table 9.20 Teachers' assessments of mathematical skills in children with and without neurological abnormalities.

Group	Mathematical skills: Good		Average		Poor		Total
	No.	%	No.	%	No.	%	
PH children with neurological abnormalities	8	11.4	20	28.6	42	60.0	70
PH children without neurological abnormalities	14	31.8	13	29.5	17	38.6	44
Total number of children	22	19.3	33	28.9	59	51.8	114

Arithmetical attainment was found to be dependent on the children's intellectual ability, both non-verbal ($r = .62$, df 112, $p < .001$) and verbal ($r = .72$, df 112, $p < .001$) Table 9.21 illustrates the relationship of arithmetical ability to the level of non-verbal and verbal intelligence.

Table 9.21 Arithmetical attainment and intellectual ability in PH children.

Intellectual ability	PH Children	Arithmetical skills		ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	43	12.09	3.46	
Average	50	8.94	2.53	31.40***
Below average	21	6.23	2.41	
Total number of children	114	9.63	3.59	
Verbal				
Above average	40	12.53	3.00	
Average	39	9.46	2.56	48.08***
Below average	35	6.51	2.31	
Total number of children	114	9.63	3.59	

df 2,111 ***$p < .001$

Between the sexes no differences of statistical significance were found among the total group of physically

handicapped children. The boys scored slightly higher than the girls, the means being 10.08 and 9.08 respectively ($t = 1.49$, df 112). However, at Ordinary Day schools, boys were significantly better at arithmetic than were girls ($t = 2.39$, df 36, $p < .05$).

Statistically significant differences in arithmetical ability were found among children of different socio-economic backgrounds, the trend being similar to that for reading ability ($F = 8.37$, df 3, $p < .01$). See Table 9.22.

Table 9.22 Arithmetical attainment and social class in PH children.

Social class	PH Children	Arithmetical skills	
	No.	Mean	S.D.
I + II	28	11.64	3.51
III non-manual	18	11.28	3.59
III manual	36	8.33	3.15
IV + V	32	8.41	3.04

Environmental home circumstances had a significant effect on the arithmetical attainment of the total group of children ($t = 2.49$, df 112, $p < .001$), the children from favourable home environmental circumstances attaining a mean arithmetical score of 10.21 as compared

with those from unfavourable home circumstances which was 8.47.

A low negative but significant correlation was found between school absence and arithmetical attainment ($r = -.23$, df 112, $p < .05$), those being most frequently absent having poorer attainments. Again as with reading attainment the relationship was strongest for physically handicapped children at SR schools ($r = -.32$, df 36, $p < .05$). In stark contrast with reading ability, arithmetical ability correlated significantly with the scales measuring attitude to school, and certain aspects of personality. The correlations which were significant for the total group of children are shown in Table 9.23. It can be seen that children who score high on the arithmetic test were better adjusted than those with low scores. The former showing greater interest in school work, less conformity, less anxiety and a better academic self-image. Of note, with exception to teachers' assessments of adjustment, none of the correlations reached significance among the Special Day school children.

Of note, children who scored high on the arithmetical test tended to score low on the JEPI lie scale ($r = -.37$, df 112, $p < .001$).

Table 9.23 Pearson correlation coefficients between arithmetical attainment and attitudes to school and adjustment as assessed by the PH children and their teachers.

Factors	Correlation with arithmetical attainment
Interest in school work (Barker Lunn)	.24**
Conforming behaviour[1] (Barker Lunn)	-.21*
Anxiety in class (freedom from) (Barker Lunn)	.33***
Academic self-image (Barker Lunn)	.30***
Emotional adjustment (C.T.P.	.31***
Social adjustment (C.T.P.)	.26**
Total adjustment (C.T.P.)	.33***
Teachers' assessment of adjustment (BSAG)[2]	-.20*

df 112, *p <.05; **p <.01; ***p <.001

[1] a high score indicates conforming behaviour

[2] a high score indicates maladjustment

Comparison of control children at day and residential schools.

Significant differences were not found in the arithmetical attainment of control children at day or at

boarding school. The respective mean arithmetic scores were 11.99 and 12.63 (t = -1.11, df 112). A similar pattern of results was found in relation to the teachers' assessments of mathematical skills (Table 9.24). These assessments correlated positively with the objective assessment of the children's arithmetical ability (r = -0.62, df 112, p <.001).

Table 9.24 Mathematical skills and teachers' assessments of 114 control children.

	Mathematical skills						
Schools	Good		Average		Poor		Total
	No.	%	No.	%	No.	%	
Day	31	40.8	30	39.5	15	19.7	76
Boarding	13	34.2	20	52.6	5	13.2	40
Total No. of children	44	38.6	50	43.9	20	17.5	114

Chi square = 1.91, df 2, NS

Factors affecting arithmetical attainment.

Arithmetical ability was found to correlate positively with intellectual ability, both non-verbal (r = .62, df 112, p <.001) and verbal (r = .55, df 112, p <.001). A breakdown of arithmetic scores in terms of non-verbal intelligence is shown in Table 9.25.

Table 9.25 Arithmetical attainment and intellectual ability of control children.

Intellectual ability	Controls	Arithmetical attainment		F ratio
	No.	Mean	S.D.	
Non-verbal				
Above average	48	14.06	2.70	
Average	48	11.35	2.17	29.33***
Below average	18	9.50	1.95	
Verbal				
Above average	66	13.36	2.70	
Average	40	10.75	2.41	16.17***
Below average	8	9.88	2.53	

df 2,111, ***p < .001

Significant differences were found in the arithmetical attainment in respect of age. The highest mean score (13.11) was obtained by the nine-year-old children, followed by the ten-year-old children (12.13) and then by those of eleven years (11.51). The differences between these means were significant at the .05 level ($F = 3.18$, df 2,111).

When the effects of social class were examined (Table 9.26) there was a tendency for children of class I + II to do better in arithmetic than those from the other classes ($F = 4.00$, df 3,110, $p < .05$). Furthermore, children from favourable environments scored significantly higher on the arithmetic test than those from unfavourable ones, the

means being respectively 12.55 and 11.17 ($F = 5.02$, df 1,112, $p < .05$).

Table 9.26 Arithmetical attainment and social class in control children.

Social class	Controls	Arithmetical attainment	
	No.	Mean	S.D.
I + II	53	13.13	2.73
III non-manual	21	11.91	2.76
III manual	23	11.22	2.66
IV + V	17	11.00	3.28

A tendency was found for children from small size families with high ordinal positions to obtain high scores on the arithmetical test, the Pearson correlation coefficients being -.31 (df 112, $p < .001$) and -.22 (df 112, $p < .05$) respectively.

Statistically significant differences in arithmetical attainment were found between boys and girls, their respective means being 12.91 and 11.33 ($t = 2.96$, df 112, $p < .01$).

As before a low negative but significant correlation was observed between school absence and arithmetical attainment ($r = -.22$, df 112, $p < .05$).

The children's attitudes to school, along with their teachers' assessments of personality were correlated with their attainments in arithmetic. Only the coefficients which reached significance are shown in Table 9.27. The results show that children with good arithmetical attainments were more likely than those with poor attainments to be better adjusted, emotionally and socially. They tended also to be more extraverted, more positive in relation to their academic self-image and better able to get on with their peers.

Table 9.27 Pearson correlation coefficients between arithmetical attainment and personality factors as assessed by the control children and their teachers.

Factors	Correlation with arithmetical attainments
Extraversion (JEPI)	.30***
Getting on well with classmates	.29**
Academic self-image	.19*
Emotional adjustment	.33***
Social adjustment	.26**
Total adjustment	.32***
Teachers assessment of adjustment (BSAG)1	-.19*

df 112, *p <.05; **p <.01; ***p <.001

[1] a high score indicates maladjustment.

Comparison of handicapped children with their controls.

Statistically significant differences were not found between the arithmetical ability of physically handicapped children and that of their controls at OD schools. However, significant differences well beyond the .001 level occurred between handicapped children at SD schools and their controls as well as between the SR group and their controls.

Table 9.28 Comparison of PH children and their controls on arithmetical attainment.

Schools	Children	Arithmetical attainment		T-value
	No.	Mean	S.D.	
O.D.	38	11.24	3.63	-1.68
O.D.C.	38	11.97	3.17	
S.D.	38	9.18	3.30	-5.07***
S.D.C.	38	12.00	3.00	
S.R.	38	8.47	3.33	-6.82***
S.R.C.	38	12.63	2.58	

df 37, ***p <.001

The significant difference in arithmetical attainment between the SR school children and their controls was not unexpected in view of the significant difference which was found in their intellectual ability (Tables 4.15 and 4.18) and the strong positive relationship shown earlier to exist between these factors. However,

when the arithmetic scores were corrected for non-verbal intelligence the level of attainment between the physically handicapped children and their controls remained significantly different ($F = 30.34$, df 1,73, $p < .001$). On the other hand when the difference in attainment between the two groups were assessed after removing the variation due to verbal intelligence, it was considerably reduced and was no longer statistically significant ($F = 3.07$, df 1,73). The differences in the mean scores before and after adjustment of intelligence is shown in Table 9.29.

Table 9.29 Mean arithmetic scores of PH children at SR schools and their controls before and after adjustment of scores according to intelligence.

Groups	Mean arithmetic scores before adjustment	Mean arithmetic scores after adjustment of non-verbal intelligence	Mean arithmetic scores after adjustment of verbal intelligence
S.R.	8.47	8.83	9.93
S.R.C.	12.63	12.27	11.17

Of note, analysis of covariance was also performed on the arithmetic scores of the SD and SDC groups owing to the significant differences which were found in the verbal ability of these groups. After removing the variation due to verbal intelligence, the 'corrected' scores still showed that the control children were superior in arithmetical skills to the physically

handicapped children, the adjusted mean scores being 11.38 and 9.80 respectively ($F = 6.74$, df 1,73, $p < .05$).

CHAPTER 10

MATERNAL AND PATERNAL ATTITUDES TO CHILDREN

In this chapter the maternal and paternal attitudes of parents of both handicapped and control children are examined by use of the Parent-Attitude Survey (page 100). It provides independent measures of dominance, possessiveness and a "tendency to ignore". A high overall total (of these three dimensions) indicates an "unhealthy" attitude.

The presentation of results follows the same format used in the previous chapters. The present chapter in addition attempts to check for sample bias as approximately 40 per cent of parents did not return the questionnaires (page 120). Characteristics of handicapped and control children of respondent parents in the study are examined and compared with those of the children of non-respondent parents.

Maternal Attitudes

Comparison among mothers of handicapped children.

The mothers of physically handicapped children at Special Residential schools (SR) had the highest mean 'total' score followed by those of physically handicapped children at Ordinary Day schools and then by those of

physically handicapped children at Special Day schools (SD). Table 10.1 shows that this pattern of results was similar in the respect of the 'ignoring' and 'dominant' scales. However, in relation to the possessive scale the OD mothers, obtained the highest mean score followed by SR mothers and then by SD mothers. None of the differences found in relation to maternal attitudes reached statistical significance.

Table 10.1 Attitudes of mothers (U.C.P.A.S.) of handicapped children.

Attitudes* scales	Schools OD (N=24) Mean	S.D.	SD (N=25) Mean	S.D.	SR (N=18) Mean	S.D.	F ratio
Total	331.71	38.53	326.20	24.74	334.11	27.03	.61
Ignoring	56.67	5.03	55.68	3.17	58.78	5.24	.43
Possessive	87.17	10.71	84.32	9.86	86.28	9.66	.50
Dominant	164.38	18.16	162.36	13.67	165.89	16.03	.77

*High score indicates unhealthy psychological responses

Factors affecting the attitudes of the mothers.

A low negative but significant correlation was observed between severity of disability and maternal attitudes ($r = -.25$, df 112, $p < .05$) that is, mothers of the less severely disabled children tended to have more unhealthy attitudes. When the total scores were broken

down by the different degrees of severity (i.e., mild, moderate or severe) no statistically significant differences were found. The mean total scores of mothers of mildly disabled children and those of moderately or severely handicapped children were 334.20 and 326.30 ($t = 1.16$, df 65).

A relationship was noted between the socio-economic background of the mothers and their attitudes to children, the mothers from lower social classes tending to have more "unhealthy" psychological responses than had those from the higher social groups. See Table 10.2.

Table 10.2 Maternal attitudes (total scores) and social class - handicapped group.

Social class	PH Children	Maternal Attitudes		F ratio
	No.	Mean	S.D.	
I + II	18	322.56	26.45	
III Non-manual	12	322.58	26.72	3.04*
III Manual	21	330.86	26.15	
IV + V	16	347.06	25.56	

df 3,65, *$p < .05$

The total scores and the scores of the sub-scales of the mothers were correlated with the personality characteristics of the children as measured by the J.E.P.I., the C.T.P., and the B.S.A.G. and the attainment scores. From Table 10.3 it can be seen that there was a relationship

between social and emotional adjustment of children (as measured by the California Test of Personality) and maternal attitudes.

Table 10.3 Pearson correlation coefficients between maternal attitudes and adjustment and personality characteristics of handicapped children.

	SHOBEN'S U.C.P.A.S.[1]			
Factors	Total (N=67)	Ignoring (N=67)	Possessive (N=67)	Dominant (N=67)
Neuroticism	.04	-.01	.09	-.01
Extraversion	.15	.11	.14	.12
Lying	.11	.02	.12	.13
Emotional adjustment	-.26*	-.28*	-.20	-.20
Social adjustment	-.25*	-.19	-.13	-.26*
Total adjustment	-.25*	-.28*	-.19	-.22
Teachers' assessment of adjustment	-.10	-.13	-.08	-.07

df 65, *p $<$ .05

[1] High scores on these scales indicates unhealthy psychological responses.

The table further shows that high scores on the ignoring scale were associated with poorer emotional adjustment in the children, whereas high scores on the dominant scale were related to poorer social adjustment. Of interest, the direction of the values of r in respect of the teachers' assessments were contrary to that which might have been expected.

Comparison of attitudes of mothers of control children.

For reasons that were given earlier (page comparisons of the attitudes of mothers of control children were limited to those from only OD and SD schools. No significant differences appeared (Table 10.4)

Table 10.4 Attitudes of mothers of control children.

Attitude scales	Schools				F ratio
	ODC (N=20)		SDC (N=21)		
	Mean	S.D.	Mean	S.D.	
Total	321.65	22.38	323.29	25.28	.05
Ignoring	54.25	4.92	53.86	4.88	.80
Possessive	83.05	8.66	84.05	8.41	.14
Dominant	159.30	11.64	160.05	16.97	.03

Factors affecting the attitudes of mothers.

Social class was found to explain 29.2 per cent of the total variation in maternal attitudes for the control group. The relationship between the expressed attitudes (total score) of the mothers and their socio-economic background is illustrated in Table 10.5.

No significant relationships were found between the attitudes of the mothers and their children's personality traits and adjustment.

Table 10.5 Maternal attitudes (total scores) and social class - control group.

Social class	Controls No.	Maternal attitudes Mean	S.D.	F ratio
I and II	15	310.53	18.43	
III Non-manual	8	318.75	15.33	5.07**
III Manual	12	327.00	24.45	
IV and V	6	348.33	23.82	

df 3,37, **p < .05

Comparison of attitudes of mothers of handicapped and control children.

Significant differences were not found either between the mothers of disabled children at Ordinary Day schools and their controls or between the mothers of those at Special Day schools and their controls. See Table 10.6.

Table 10.6 Comparison of attitudes of mothers of handicapped and control children.

Schools	Total Mean	F ratio	Ignoring Mean	F ratio	Possessive Mean	F ratio	Dominant Mean	F ratio
OD (N=24)	333.71	2.15	56.67	2.57	87.17	1.91	164.38	1.16
ODC (N=20)	321.65		54.25		83.05		159.30	
SD (N=25)	326.20	.16	55.68	2.32	84.32	.01	162.36	.26
SDC (N=20)	323.29		53.86		84.05		160.05	

Paternal Attitudes

Comparisons among fathers of handicapped children.

The data derived from parent attitude survey (U.C.P.A.S.) indicated that there were no differences of statistical significance among the fathers' of the handicapped children in their attitudes to child-rearing. See Table 10.7.

Table 10.7 Attitudes of fathers (U.C.P.A.S.) of handicapped children.

Attitude scales*	Schools						F ratio
	OD (N=24)		SD (N=20)		SR (N=17)		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Total	327.25	32.25	316.95	29.57	330.83	30.25	1.05
Ignoring	55.50	5.11	53.65	5.73	56.65	6.19	1.35
Possessive	84.96	9.67	84.50	10.34	85.94	9.10	.10
Dominant	162.71	18.86	154.00	18.26	163.59	18.83	1.60

*High score indicates 'unhealthy' psychological responses

Factors affecting the attitudes of the fathers.

The socio-economic background of the fathers was found to affect significantly their parental attitudes. The most "unhealthy" psychological responses were expressed by fathers from the lower socio-economic backgrounds. (Table 10.8).

Table 10.8 Paternal attitudes (total scores) and social class - handicapped group.

Social class	PH Children	Paternal attitudes		F ratio
	No.	Mean	S.D.	
I and II	17	305.12	16.97	
III Non-manual	11	316.00	41.49	10.50***
III Manual	18	324.56	19.69	
IV and V	15	354.13	24.49	

df 3,57, $p < .001$

A low but significant correlation was found between family size and paternal attitudes ($r = .28$, df 59, $p < .05$), that is fathers of large families tended to have the most "unhealthy" attitudes.

Few significant correlations were found between personality characteristics of physically handicapped children and their fathers' attitude to child-rearing. Table 10.9 shows that whereas high total scores on the Parent Attitude Survey were associated only with poorer emotional adjustment in the children, high scores on the ignoring scale were related to poorer overall adjustment, i.e., social and emotional.

Table 10.9 Pearson correlation coefficients between paternal attitudes and personality of PH children.

Factors	Attitude scales			
	Total (N=61)	Ignoring (N=61)	Possessive (N=61)	Dominant (N=61)
Emotional adjustment	-.22*	-.33**	-.01	-.22
Social adjustment	-.13	-.24*	.04	-.15
Total adjustment	-.20	-.31*	-.02	-.20

df 59, *p <.05; **p <.01

Comparison of attitudes of fathers of control children.

Differences of statistical significance were not detected between the attitudes of fathers of the ODC and SDC groups. See Table 10.10.

Table 10.10 Attitudes of fathers of control children.

Attitude scales	Schools				F ratio
	ODC (N=20)		SDC (N=21)		
	Mean	S.D.	Mean	S.D.	
Total	325.80	22.60	323.63	29.90	.08
Ignoring	55.75	4.09	55.11	4.81	.20
Possessive	85.20	8.78	84.53	9.69	.05
Dominant	160.15	13.66	159.05	16.44	.05

Factors affecting the attitudes of the fathers.

Fathers from the lower socio-economic backgrounds were more likely than those from the higher classes to express unhealthy psychological responses (Table 10.11). The social class of the fathers explained 44 per cent of the variation in their 'total' attitude scores.

Table 10.11 Paternal attitudes (total scores) and social class - control group.

Social class	Paternal attitudes			F ratio
	No.	Mean	S.D.	
I and II	14	311.93	17.55	
III Non-manual	8	321.50	19.28	9.24***
III Manual	11	323.91	17.71	
IV and V	6	360.50	24.37	

df 3,35, ***p <.001

No significant relationships were found between paternal attitude to child-rearing and the adjustment of the control children.

Comparison of attitudes of fathers of handicapped and control children.

No difference of statistical significance were observed between either the fathers of handicapped children at Ordinary Day schools and their controls or between those at Special Day schools and their controls in respect

of attitude to child-rearing. See Table 10.12.

Table 10.12 Comparison of attitudes of fathers of handicapped and control children.

Paternal attitudes

Schools	Total	F	Ignoring	F	Possessive	F	Dominant	F
	Mean	ratio	Mean	ratio	Mean	ratio	Mean	ratio
OD (N=24)	327.25		55.50		84.96		162.71	
		.03		.03		.01		.26
ODC (N=20)	325.80		55.75		85.20		160.15	
SD (N=20)	316.95		53.65		84.50		154.00	
		.54		.73		.00		.82
SDC (N=19)	323.63		55.11		84.53		159.05	

Comparison of maternal with paternal attitudes.

Parents of handicapped children.

Significant differences were found between husbands and wives in their attitudes to child-rearing. Table 10.13 shows that mothers of handicapped children were significantly more ignoring and dominant than were their husbands and that overall they expressed more "unhealthy" psychological attitudes. When the parents of the children at the different types of schools were examined separately it was found that the mothers of the SD children were significantly more dominant

than were the fathers ($t = 2.79$, df 19, $p < .05$) and had generally significantly more "unhealthy" attitudes ($t = 2.74$, df 19, $p < .05$).

Table 10.13 Comparison of maternal and paternal attitudes - handicapped group.

Attitude scales	Parent	(N=60) Parental attitudes		t-value (pairs)
		Mean	S.D.	
Total	Mother	331.47	27.68	2.32*
	Father	324.55	31.02	
Ignoring	Mother	56.55	4.45	2.13*
	Father	55.10	5.64	
Possessive	Mother	85.73	9.74	.52
	Father	85.12	9.67	
Dominant	Mother	164.13	16.11	
	Father	159.92	18.95	2.12*

df 59, *$p < .05$

Parents of control children.

No differences of statistical significance were observed between husbands and wives of the total group of control children. Table 10.14 shows the pattern of results to be different from that of the parents of handicapped children (Table 10.13); in the present case the fathers tended to obtain the higher scores except on the dominance scale, whilst in the case of the handicapped children their mothers obtained the higher scores throughout.

Table 10.14 Comparison of maternal and paternal attitudes - control group.

Attitude scales	Parent	Parental attitudes (N=39) Mean	S.D.	t-value
Total	Mother	322.92	23.35	- .48
	Father	324.74	24.48	
Ignoring	Mother	53.90	4.91	-1.86
	Father	55.44	4.41	
Possessive	Mother	83.67	8.61	- .76
	Father	84.87	9.12	
Dominant	Mother	160.23	13.43	.29
	Father	159.62	14.89	

Parents who did not reply to the parent attitude survey

Parents of handicapped children.

The severity of disability of the children did not affect the response rate of mothers or fathers (Table 10.15).

Table 10.15 Severity of disability and response rate of parents of U.C.P.A.S.

Parent	Severity of disability	Non-respondents No.	%	Respondents No.	%
Mother	Mild	25	53.2	40	59.7
	Moderate/ Severe	22	46.8	27	40.3
Father	Mild	29	54.7	36	59.0
	Moderate/ Severe	24	45.3	25	41.0

Chi-squares re. Mother = 25, df 1; re. Father = .07, df 1.

No statistical significance differences were found in the response rate when the socio-economic backgrounds of either the mothers (x^2 = 1.83, df 3) or the fathers (x^2 = 1.73, df 3) were examined.

However, statistically significant differences occurred in the environmental home circumstances of the respondent and non-respondent parents. It was found that 77.6 per cent of respondent mothers had favourable home environments as compared with 51.1 per cent of non-respondent ones. While 22.4 per cent of respondent mothers had unfavourable home circumstances, 48.9 of the non-respondent mothers had such an environment. These differences in the homes of the respondent and non-respondent mothers were statistically significant at the .01 level (x^2 = 7.61, df 1). This pattern of results was similar in the case of respondent and non-respondent fathers (x^2 = 12.38, df 1, $p < .001$).

Children of the non-respondent parents had consistently lower mean scores on the adjustment measures (an indication of poorer adjustment) than had children of the parents who responded. However, the J.E.P.I. neuroticism scale did yield statistically significant differences. The mean neuroticism scores for children of respondent and of non-respondent mothers were 11.84 and 13.72 respectively ($t = -1.99$, df 112, $p < .05$). The differences in neuroticism of children of fathers who did and did not reply were in the same direction but they did not reach

statistical significance (t = 1.82, df 112).

When the intellectual ability of the children of respondent and non-respondent parents was examined, interesting results arose. Physically handicapped children of respondent mothers were significantly better verbally than those of non-respondent mothers, the means being 103.85 and 95.7 respectively (t = 2.89, df 112, $p < .01$). Similar results were found when the verbal ability of the children was analysed in respect of the fathers' response rate (t = 2.41, df 112, $p < .05$). Educational attainment favoured the children of respondent parents, although, the differences between them and the children of non-respondent parents were not statistically significant.

Parents of control children.

No differences of statistical significance were found in the social class of the respondent or non-respondent mothers or fathers. However, as with the handicapped group the environmental home circumstances were different. It was found that 75.6 per cent of respondent mothers had favourable home environments as compared with 45.7 per cent of non-respondent ones.

While 24.4 per cent of respondent mothers had unfavourable home circumstances, 54.3 per cent of the non-respondent mothers had such an environment. These differences in environmental home circumstances between respondent and non-respondent mothers were statistically significant at the .05 level ($x^2 = 5.94$, df 1). The pattern of results

was similar in respect of environmental home circumstances of respondent and non-respondent fathers (x^2 = 5.94, df 1, $p < .01$).

Statistical significant distinctions were not found between children of respondent and non-respondent mothers and fathers in respect of adjustment (self-assessed) although the differences favoured the respondent group. The teachers, however, assessed the children of respondent fathers as being significantly more stable than those of non-respondents, the means being 4.10 and 7.12 respectively ($t = -2.18$, df 112, $p < .05$).

Significant differences were found in the non-verbal intellectual ability of children of respondent and non-respondent mothers and fathers. The differences which favoured children of parents who responded, were significant at the .05 level in the case of the fathers, and at the .01 level in the case of the mothers.

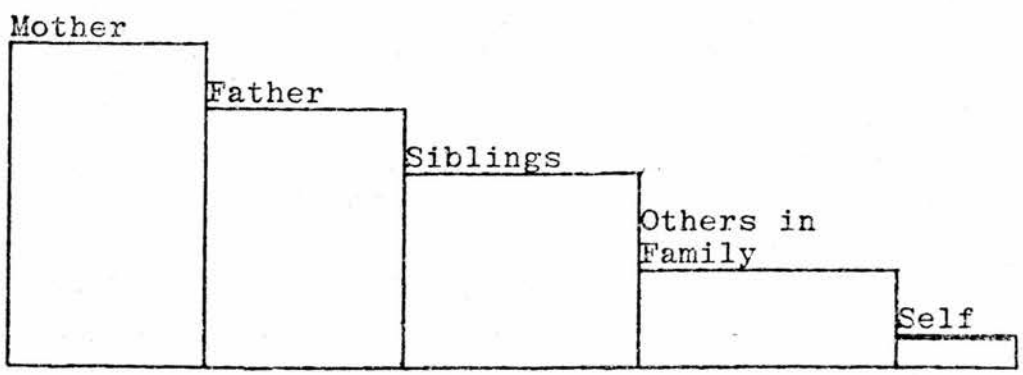
No significant differences appeared in school attainment, although, as before, the children of respondents tended to score more highly.

CHAPTER 11

FAMILY RELATIONSHIPS

This chapter examines the family relationships of both the handicapped and control children by the use of the Bene-Anthony Family Relations Test (page 104). The test items express a) positive feelings: both coming from the child (outgoing) and experienced by the child as coming from others (incoming), b) negative feelings: again both outgoing and incoming. The total number of mentions used for any one person is taken to indicate the measure of emotional involvement with that person. It is important to note whether the distribution is lop-sided with displacement of feeling from the parents to other members in the family. It should also be observed whether there are exaggerated responses - positive or negative. "From purely theoretical considerations the distribution of items might be expected to show resemblance to the hypothetical distribution in Fig. 11.1." (Bene and Anthony, Test Manual).

Fig. 11.1



Expected distribution of items (hypothetical)

Examination of the relationship between positive and negative outgoing, and positive and negative incoming items indicates the strength and direction of feeling for the individuals, i.e. whether the feelings are predominantly positive or negative or ambivalent.

Analysis of the relationship between outgoing and incoming positive, and outgoing and incoming negative feelings indicates reciprocity of feelings. It is important to observe whether there is a discrepancy between outgoing and incoming feelings.

The presentation of results takes the same format as the earlier chapters. The main object of this analysis is to provide additional information on the role of the family in relation to the school and it's contribution to the personality and adjustment of children at the varying types of school. Between the groups are examined positive and negative, incoming and outgoing feelings and the total number of mentions, for each member of the children's family[1]. Within group differences are also examined, that is the relative psychological importance of the various family members, the relationship between positive and negative outgoing feelings, and positive and negative incoming feelings. Reciprocal show of feelings is also studied. There are the feelings children have towards the family and the feelings which they consider the family

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[1]Data has only been presented for the children's two eldest siblings referred to as Sib I and Sib II. This is due to the small sample size for additional siblings.

has towards them.

Comparison among PH children at the three types of school.

The relationships toward the family members are categorized in Table 11.1 for the physically handicapped children at the various schools. Responses indicating parental overprotection and over-indulgence were excluded from the 'Total Mentions' category in order to facilitate comparison of responses classified as Positive, Negative, Outgoing and Incoming.

Responses classified as Positive-Outgoing (+O), Positive-Incoming (+I), Negative-Outgoing (O-) and Negative-Incoming (I-) are represented graphically in Figure 11.2 (p.310) so that the distribution of positive and negative feelings within the family can be observed, and reciprocity, i.e., the approximation to equivalence of Incoming and Outgoing feelings may be noted.

With the exception of Mr. Nobody there were no significant differences in relation to any of the family figures. The differences in feelings which occurred among the children in relation to Mr. Nobody were negative (unfriendly), both incoming and outgoing. It will be remembered that Mr. Nobody serves to accommodate those items that are not felt to apply to anyone in the family. When two sample comparisons were made for each value of F it was found that children at Special Residential schools assigned negative outgoing feelings to 'Mr. Nobody' with significantly greater frequency than did physically handicapped

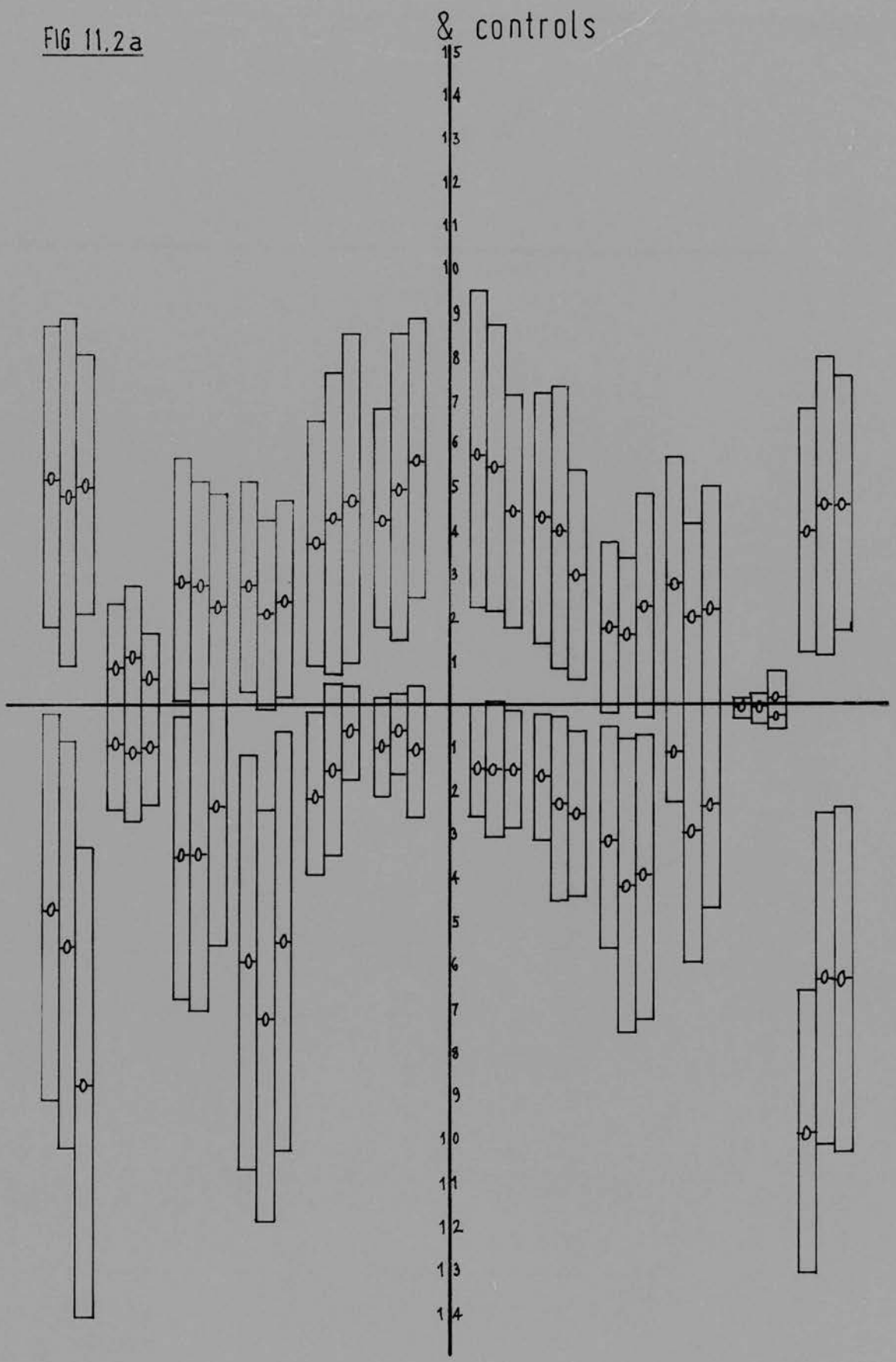
TABLE II.1: Means, standard deviations, one-way analysis of variance for each family figure and Nobody for PH children.

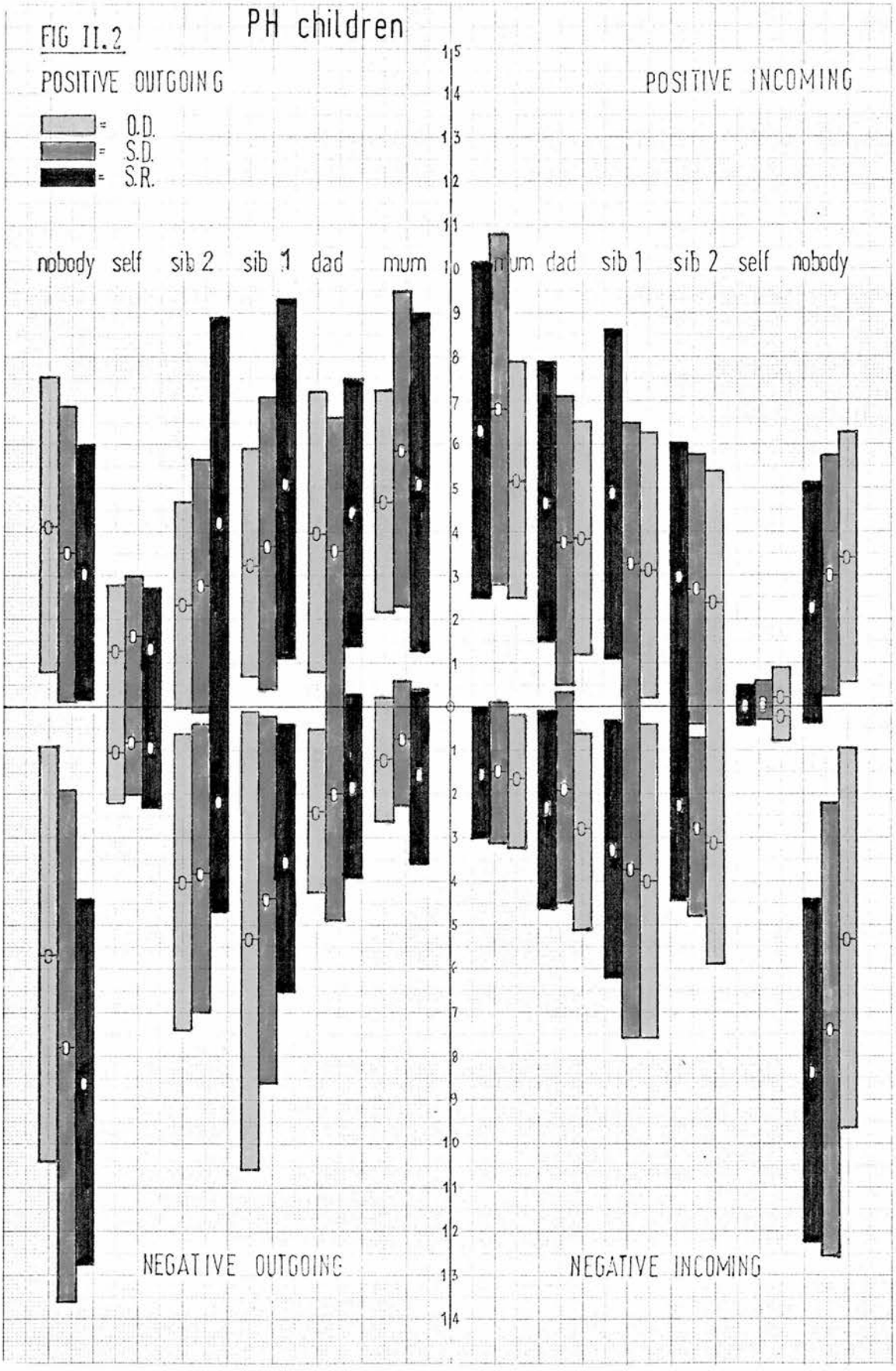
PH CHILDREN	SCHOOLS						
Response	O.D.		S.D.		S.R.		F-Ratio
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
MOTHER (N=112)	N=38		N=37		N=37		
outgoing positive	4.71	2.54	5.92	3.59	5.14	3.88	1.23
outgoing negative	1.18	1.43	0.84	1.40	1.57	2.01	1.84
incoming positive	5.21	2.70	6.81	3.98	6.35	3.82	2.04
incoming negative	1.68	1.53	1.49	1.61	1.49	1.50	0.21
Total mentions	12.87	5.23	14.97	7.60	14.54	7.50	0.99
FATHER (N=110)	N=38		N=35		N=37		
outgoing positive	4.00	3.18	3.66	2.96	4.46	3.09	0.62
outgoing negative	2.37	1.89	2.00	2.89	1.81	2.11	0.56
incoming positive	3.87	2.66	3.80	3.33	4.70	3.18	0.99
incoming negative	2.82	2.22	2.06	2.45	2.32	2.26	1.02
Total mentions	12.95	5.86	11.51	7.49	13.30	7.20	0.68
SIB.I (N=98)	N=34		N=34		N=30		
outgoing positive	3.29	2.58	3.71	3.34	5.23	4.09	2.90
outgoing negative	5.32	5.26	4.41	4.19	3.47	3.04	1.49
incoming positive	3.21	3.05	3.32	3.18	4.87	3.80	2.40
incoming negative	3.97	3.58	3.68	3.92	3.27	2.95	0.32
Total mentions	15.59	8.59	15.12	9.73	17.20	9.36	0.44
SIB.II (N=59)	N=20		N=17		N=22		
outgoing positive	2.35	2.37	2.76	2.88	4.22	4.76	1.60
outgoing negative	4.00	3.40	3.82	3.19	2.14	2.55	2.38
incoming positive	2.45	2.91	2.71	3.08	2.95	3.09	0.15
incoming negative	3.10	2.79	2.76	2.05	2.23	2.20	0.72
Total mentions	12.40	5.62	12.06	7.50	11.00	6.73	0.26
SELF (N=114)	N=38		N=38		N=38		
outgoing positive	1.32	1.47	1.66	1.34	1.37	1.36	0.66
outgoing negative	1.02	1.17	0.76	1.24	0.92	1.36	0.42
Total mentions	2.80	2.69	2.58	2.09	2.47	2.11	0.18
NOBODY (N=114)	N=38		N=38		N=38		
outgoing positive	4.16	3.38	3.50	3.38	3.08	2.92	1.03
outgoing negative	5.66	4.74	7.76	5.84	8.58	4.16	3.51*
incoming positive	3.42	2.83	3.00	2.77	2.26	2.90	1.62
incoming negative	5.32	4.33	7.37	5.16	8.34	3.91	4.48*
Total mentions	18.55	11.46	21.63	14.12	21.97	10.04	0.94

*df. 2,111, $p < .05$.

[1] Incoming feelings to Self were not included in the tables as few such responses were forthcoming. This was to be expected as items like "this person in the family likes to kiss me" are unlikely to be assigned to Self.

FIG 11.2a





Score profiles for each family figure and 'Nobody'. The symbol in the centre of each bar represents the mean. The upper and lower limits of the bar indicate the distribution of scores within one standard deviation.

children at Ordinary Day schools ($t = 2.86$, df 72.8, $p < .01$). The OD children distributed significantly less incoming negative items to Nobody than either the children at SR ($t = 2.93$, df 111, $p < .01$) or SD ($t = 1.99$, df 111, $p < .05$) schools.

The relative psychological importance of the various family members.

As may be observed from Table 11.2 and Figure 11.3, Mr. Nobody received a greater total number of mentions as compared with the parental figures, being particularly favoured in respect of negative items.

The psychological importance of Nobody and Sib I was on the whole similar for children at day schools. However, in the case of children at SR schools positive items were placed with greater frequency in Sib I and negative statements with greater frequency in Mr. Nobody.

Table 11.2 and Figure 11.3 further show that each group of physically handicapped children mentioned Sibling I in preference to any other member of the family. However, the differential rate of responses for mother and Sib I was only statistically significant in respect of the OD group (Table 11.2). In relation to father and Sib I the difference in total responses was only statistically significant for children at Special Residential schools.

When the total responses were broken down to various response categories, the results indicated (Table 11.2) that with the exception of the SR groups, mothers

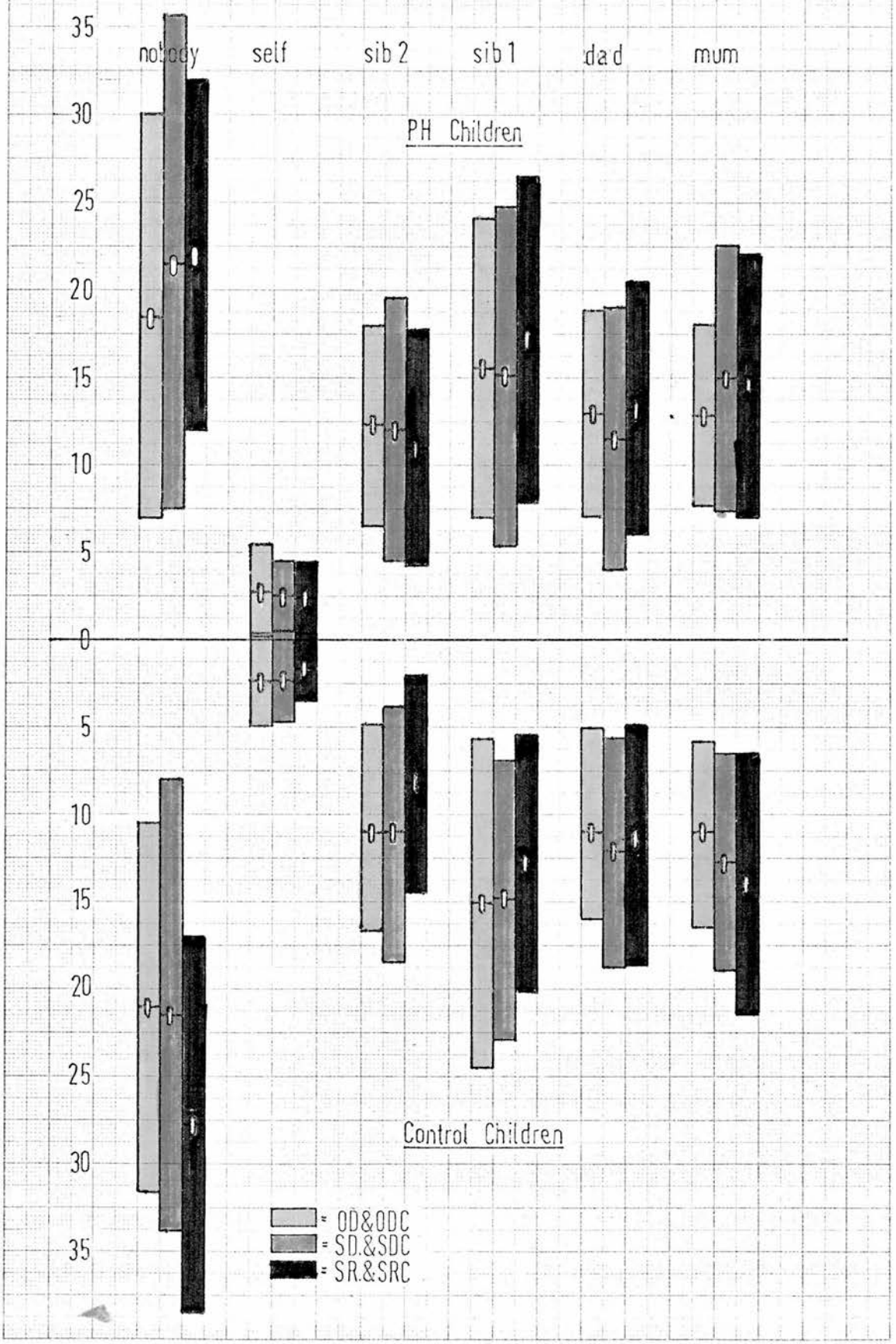
TABLE II.2: Relative psychological importance of the various family figures and Nobody for PH children.

PH CHILDREN	SCHOOLS					
Response	O.D.		S.D.		S.R.	
	No.	t-value[+]	No.	t-value[+]	No.	t-value[+]
NOBODY vs MOTHER						
positive outgoing	38	-0.70	37	-2.53*	37	-2.26*
positive incoming	38	-2.57*	37	-4.06***	37	-4.45***
negative outgoing	38	5.20***	37	7.04***	37	8.32***
negative incoming	38	4.47***	37	6.57***	37	9.01***
Total involvement	38	2.76**	37	2.51*	37	3.34**
NOBODY vs FATHER						
positive outgoing	38	0.18	38	-0.09	37	-2.04*
positive incoming	38	-0.70	35	-0.94	37	-3.36**
negative outgoing	38	3.85***	35	4.83***	37	8.13***
negative incoming	38	2.95**	35	5.24***	37	7.14***
Total involvement	38	2.72**	35	3.85***	37	4.51***
NOBODY vs SIB.I						
positive outgoing	34	0.70	34	-0.51	30	-2.25*
positive incoming	34	0.24	34	-0.60	30	-2.49*
negative outgoing	34	0.04	34	1.82	30	4.11***
negative incoming	34	0.68	34	2.27*	30	4.20***
Total involvement	34	0.68	34	1.50	30	1.45
MOTHER vs FATHER						
positive outgoing	38	1.26	34	3.45**	36	1.47
positive incoming	38	2.65*	34	3.47***	36	2.96**
negative outgoing	38	-4.36***	34	-2.19*	36	-0.59
negative incoming	38	-2.57*	34	-1.13	36	-2.06*
Total involvement	38	-0.08	34	2.36*	36	1.33
MOTHER vs SIB.I						
positive outgoing	34	2.62*	33	2.16*	30	-0.55
positive incoming	34	2.73**	33	3.22**	30	1.19
negative outgoing	34	-4.77***	33	-4.48***	30	-2.95**
negative incoming	34	-3.34**	33	-3.02**	30	-3.05**
Total involvement	34	-2.12*	33	-0.37	30	-1.93
FATHER vs SIB.I						
positive outgoing	34	0.95	31	-0.52	29	-1.70
positive incoming	34	0.91	31	0.18	29	-0.83
negative outgoing	34	-3.12**	31	-2.39*	29	-3.10**
negative incoming	34	-1.74	31	-1.80	29	-1.69
Total involvement	34	-1.91	31	-1.87	29	-2.99**

df=n-1 *=p $<$.05; **=p $<$.01; ***=p $<$.001

t positive t values indicate that the category on the left is significantly larger; vice-versa for negative values.

FIG II.3



'Total mentions' for each family figure and 'Nobody'. The symbol in the centre of each bar represents the mean. The upper and lower limits of the bar indicate the distribution of scores within one standard deviation.

were favoured in respect of positive items, both outgoing and incoming, while Sib I was favoured when placing outgoing and incoming negative items. Father did not receive significantly more positive items, either outgoing or incoming, than did Sib I, but significantly fewer outgoing negative items were assigned to him by all the children.

Differences of statistical significance were not found in the emotional involvement with mother and father for children at either OD or SR schools. Children at Special Day schools, were, however, significantly more attached to their mothers than to their fathers (Table 11.2). While only the SD group expressed more positive attitudes to mother than to father, all the handicapped groups considered that their mothers had more positive feelings toward them as compared with their fathers. Children at OD and SD schools felt more negatively towards their fathers than their mothers. Furthermore, the fathers were considered by children at OD and SR schools to have more negative feelings than their mothers toward them.

Relationship between positive and negative feelings.

The feelings involving the parents, particularly the mother were predominantly positive (Table 11.3). The feelings involving Sib I, however, tended with the exception of the SR group to be negative, although differences between the positive and the negative items did not reach statistical significance.

Table 11.3 Relationship of positive and negative feelings to various family figures and 'Nobody'.

Response categories	Schools					
	O.D.		S.D.		S.R.	
	No.	t-value[1]	No.	t-value	No.	t-value
MOTHER						
O + vs O -	38	7.33***	37	8.41***	37	4.59***
I + vs I -	38	6.95***	37	7.75***	37	7.16***
FATHER						
O + vs O -	38	2.52*	35	2.37*	37	4.06***
I + vs I -	38	1.66	35	2.44*	37	3.93***
Sib I						
O + vs O -	34	-1.74	34	-0.75	30	1.74
I + vs I -	34	-0.85	34	-0.39	30	1.84
NOBODY						
O + vs O -	38	-1.61	38	-4.55***	38	-7.03***
I + vs I -	38	-2.44*	38	-5.61***	38	-8.57***

df = n - 1, *p < .05; ***p < .001

[1] Positive t-values indicate that the positive category is significantly larger, vice versa for negative values.

The feelings expressed by the children towards Mr. Nobody were overwhelmingly negative, and only in one case (outgoing attitudes of children at OD schools) did the effect fail to reach significance (Table 11.3)

Relationship between outgoing and incoming feelings.

The feelings children had towards their fathers were closely related to the feelings they believed their fathers had towards them (Table 11.4). However, incoming and outgoing feelings were not as consistent for mother. Table 11.4 shows that children at SR schools ascribed significantly more positive incoming than outgoing statements to mother, whilst children at SD schools showed a discrepancy in the same direction but for negative feelings. In the case of Sib I and 'Mr. Nobody' the only group of children to show a discrepancy between the incoming and outgoing feelings were those attending ordinary day schools A greater proportion of negative incoming than outgoing statements were placed with Sib I whilst more positive incoming than outgoing statements were ascribed to 'Mr. Nobody'

Factors affecting family - child relationships.

An attempt was made to discover whether the children's family relationships were influenced by factors such as severity of disability, or the presence or absence of neurological abnormalities. Relationships of this

Table 11.4 Reciprocity of feeling by PH children for each family figure and 'Nobody'.

Response categories O = outgoing I = incoming	O.D.		S.D.		S.R.	
	No.	t-value	No.	t-value	No.	t-value
MOTHER						
O + vs I +	38	-1.27	37	-1.84	37	-3.83***
O - vs I -	38	-1.83	37	-2.23*	38	0.24
FATHER						
O + vs I +	37	0.30	35	-0.34	37	-0.96
O - vs I -	38	-1.51	35	-0.22	37	-1.57
SIB I						
O + vs I +	34	0.30	34	1.78	30	0.64
O - vs I -	34	2.88**	34	1.99	30	.44
NOBODY						
O + vs I +	38	2.26*	38	1.73	38	2.59*
O - vs I -	38	0.84	38	0.99	38	0.58

df = n -1; *p $<$.05; **p $<$.01; ***p $<$.001

+ Positive values indicate that the positive category is significantly larger; vice versa for negative values.

nature did not occur.

When demographic details of disabled children were correlated with the Family Relations test, a slight tendency was found for physically handicapped children of high socio-economic background to be aware of more negative attitudes of their mothers towards them than was the case in handicapped peers of low social class ($r = -.21$, df 112, $p < .05$).

Family size was found to affect the distribution of the children's test items. Children from large families were more likely than those from small families to disperse their cards widely throughout the family resulting in low scores for the various response categories for each of the family figures. For example, the coefficients obtained by correlating, total involvement with mother and father with the children's family size were -.30 (df 112, $p < .001$) and .24 (df 112, $p < .01$) respectively.

Low but significant correlations were found between adjustment as assessed by the physically handicapped children and their perceived family relationships, (Table 11.5). Well adjusted children were more likely than the not so well adjusted to express positive feelings about the parents particularly the fathers; they were more likely to perceive the parents, particularly the fathers as having positive feelings towards them.

Negative feelings, both outgoing and incoming with particular reference to father tended to be indicative of poor adjustment.

The discarding of negative statements into 'Mr. Nobody' was more characteristic of children with high scores when compared with those with low scores on the adjustment scales (C.T.P.).

Table 11.5 Pearson correlation coefficients between family relationships (Bene-Anthony) and adjustment (C.T.P.) for PH children.

		Adjustment	
Response categories	Emotional adjustment	Social adjustment	Total adjustment
Nobody (N=114)			
Outgoing Positive	.17	.06	.11
Outgoing Negative	.30***	.37***	.33***
Incoming Positive	.11	.06	.06
Incoming Negative	.37***	.39***	.38***
Total Involvement	.33***	.33***	.32***
Mother (N=112)			
Outgoing Positive	.15	.19*	.20*
Outgoing Negative	-.12	-.24*	-.17
Incoming Positive	.16	.18	.19*
Incoming Negative	-.22*	-.17	-.19*
Total Involvement	.08	.09	.12
Father (N=110)			
Outgoing Positive	.30***	.35***	.35***
Outgoing Negative	-.32***	-.36***	-.34***
Incoming Positive	.24**	.31***	.31***
Incoming Negative	-.24*	-.27**	-.25**
Total Involvement	.05	.08	.10

df = n - 2; **p < .01; ***p < .001

Incoming negative feelings from mother was the only response category which showed a relationship to neuroticism ($r = .23$, df 110, $p < .05$). Extraversion correlated positively with total involvement with fathers ($r = .34$, df 108, $p < .001$) and with mother ($r = .24$, df 110, $p < .05$) this relationship being strongest in respect of the positive items. Relationships were also found between the Lie scale (J.E.P.I.) and outgoing positive responses to Mr. Nobody ($r = -.28$, df 112, $p < .01$) and outgoing positive responses to Mother ($r = -.23$, df 110, $p < .05$). In other words, children with high scores on the Lie scale were more likely than those with low scores to discard less positive statements (both outgoing and incoming) to Mr. Nobody and assign less outgoing negative items to Mother.

Adjustment of the children as rated by teachers showed no relationship to the children's perceived relationships with their parents, siblings, or 'Nobody'.

Comparison among control children at day and residential schools.

The means and standard deviations for each family figure of the control children for the major response categories are shown in Table 11.6.[1]

Responses classified as Positive-Outgoing (+O), Positive-Incoming (+I), Negative-Outgoing (O-) and Negative-

[1] In order to facilitate comparison of response classifications, responses indicating parental overprotection and over-indulgence were excluded from the 'Total Mentions' category.

TABLE II.6: Means, standard deviations, one-way analysis variance for each family figure and Nobody for control children at day and residential schools.

CHILDREN	SCHOOLS					
RESPONSE	DAY		RESIDENTIAL		t-value	df.
	Mean	S.D.	Mean	S.D.		
MOTHER (N=114)	N=76		N=38			
outgoing positive	4.68	3.10	5.74	3.20	-1.69	112
outgoing negative	0.80	1.02	1.05	1.49	-1.05	112
incoming positive	5.04	3.07	5.87	3.71	-1.27	112
incoming negative	1.45	1.47	1.29	1.31	0.56	112
Total mentions	11.92	5.77	13.95	7.52	-1.46	112
FATHER (N=109)	N=75		N=34			
outgoing positive	3.99	3.13	4.82	3.83	-1.20	107
outgoing negative	1.76	1.97	0.65	1.23	3.60***	96.2
incoming positive	3.63	2.89	4.35	2.88	-1.22	107
incoming negative	2.39	2.01	1.65	1.45	1.92	107
Total mentions	11.59	5.75	11.47	6.59	0.09	107
SIB.I (N=106)	N=71		N=35			
outgoing positive	2.42	2.30	2.43	2.27	-0.01	104
outgoing negative	6.56	4.78	5.46	4.85	1.11	104
incoming positive	2.06	2.23	1.86	1.97	0.45	104
incoming negative	4.01	3.31	3.03	2.60	1.54	104
Total mentions	15.01	8.70	12.77	7.40	1.38	104
SIB.II (N=69)	N=47		N=22			
outgoing positive	2.87	2.58	2.32	2.59	0.83	67
outgoing negative	3.51	3.36	2.23	3.41	1.47	67
incoming positive	2.21	2.50	2.86	2.95	-0.95	67
incoming negative	2.51	2.80	0.86	1.28	2.63*	67
Total mentions	10.96	6.59	8.23	6.18	1.67	67
SELF (N=114)	N=76		N=38			
outgoing positive	0.99	1.57	0.63	1.13	1.39	98.2
outgoing negative	1.00	1.58	0.92	1.44	0.26	112
Total mentions	2.28	2.56	1.63	2.01	1.47	112
NOBODY (N=114)	N=76		N=38			
outgoing positive	5.09	3.76	5.08	3.04	1.52	112
outgoing negative	5.15	4.61	8.76	5.45	-3.71***	112
incoming positive	4.75	3.17	4.13	2.82	1.02	112
incoming negative	6.28	3.89	9.82	3.25	-4.83***	112
Total mentions	21.29	11.47	27.79	10.77	-2.91**	112

*=p < .05; **=p < .01; ***=p < .001

[1]Incoming feelings to Self were not included in the tables as few such responses were forthcoming. This was to be expected as items like "this person in the family likes to kiss me" are unlikely to be assigned to Self.

TABLE II.7: Means and standard deviation for each family figure and Nobody for the two groups of control children at day schools.

CHILDREN	SCHOOLS			
Response	O.D.C.		S.D.C.	
	Mean	S.D.	Mean	S.D.
MOTHER (N=76)	N=38		N=38	
outgoing positive	4.32	2.56	5.05	3.56
outgoing negative	0.97	1.15	0.63	0.85
incoming positive	4.53	2.73	5.55	3.33
incoming negative	1.45	1.41	1.45	1.55
Total mentions	11.13	5.28	12.71	6.20
FATHER (N=75)	N=38		N=37	
outgoing positive	3.71	2.82	4.27	3.44
outgoing negative	2.03	1.91	1.49	2.00
incoming positive	3.08	2.41	4.19	3.25
incoming negative	2.47	1.91	2.30	2.13
Total mentions	11.08	5.02	12.11	6.45
SIB.I (N=71)	N=36		N=35	
outgoing positive	2.75	2.41	2.09	2.16
outgoing negative	5.94	4.77	7.20	4.78
incoming positive	2.36	2.62	1.74	1.72
incoming negative	3.89	3.29	4.14	3.36
Total mentions	15.14	9.51	14.89	7.93
SIB.II (N=47)				
outgoing positive	2.92	2.80	2.83	2.39
outgoing negative	3.54	3.24	.348	3.55
incoming positive	2.29	2.87	2.13	2.12
incoming negative	2.25	2.44	2.78	3.16
Total mentions	10.75	5.94	11.17	7.33
SELF (N=76)	N=38		N=38	
outgoing positive	0.87	1.44	1.11	1.71
outgoing negative	0.97	1.48	1.03	1.68
Total mentions	2.29	2.79	2.26	2.34
NOBODY (N=76)	N=38		N=38	
outgoing positive	5.26	3.47	4.92	4.06
outgoing negative	4.71	4.45	5.58	4.78
incoming positive	4.76	2.94	4.74	3.42
incoming negative	6.29	4.01	6.26	3.83
Total mentions	21.08	10.64	21.50	12.39

[1] Incoming feelings to Self were not included in the tables as few such responses were forthcoming. This was to be expected as items like "this person in the family likes to kiss me" are unlikely to be assigned to Self.

Incoming (I-) are represented graphically in Figure 11.2a (transparent sheet of paper) so that the distribution of positive and negative feelings may be considered. Both control groups attending day school (i.e., ODC and SDC) are represented separately in Figure 11.2a; this is to make easier the comparison between each physically handicapped group and the corresponding control group. The means and standard deviations of these two day school groups are shown in Table 11.7.

'Mr. Nobody' was mentioned more frequently by children at boarding school than by those at day school ($p < .01$). Negative statements were particularly favoured (Table 11.6).

More outgoing negative feelings to father were expressed by children at day than at residential schools ($p < .001$). Children at day school also assigned more negative incoming feelings to the next eldest siblings (Sib II).

The relative psychological importance of the various family members.

'Mr. Nobody' received a greater total number of mentions as compared with any other member of the family. He was particularly favoured in respect of negative statements. Positive feelings were invested in 'Nobody' in preference to the eldest sibling (Table 11.8).

TABLE 11.8: Relative psychological importance of the various family members and Nobody for control children at day and residential schools

CHILDREN	SCHOOLS			
Response	DAY		RESIDENTIAL	
	No.	t-value	No.	t-value
NOBODY vs MOTHER				
positive outgoing	76	0.62	38	-0.74
positive incoming	76	-0.49	38	-1.88
negative outgoing	76	8.02***	38	7.86***
negative incoming	76	9.55***	38	14.31***
Total involvement	76	6.12***	38	5.77***
NOBODY vs FATHER				
positive outgoing	75	1.54	34	0.03
positive incoming	75	1.99*	34	-0.26
negative outgoing	75	5.32***	34	7.39***
negative incoming	75	7.00***	34	11.43***
Total involvement	75	5.94***	34	6.63***
NOBODY vs SIB.I				
positive outgoing	71	4.52***	35	4.03***
positive incoming	71	5.20***	35	3.60***
negative outgoing	71	-2.29*	35	1.81
negative incoming	71	2.75**	35	7.10***
Total involvement	71	2.84**	35	5.20***
MOTHER vs FATHER				
positive outgoing	75	1.75	34	1.58
positive incoming	75	3.20**	34	2.33*
negative outgoing	75	-4.03***	34	1.48
negative incoming	75	-3.28**	34	-1.54
Total involvement	75	0.49	34	2.35*
MOTHER vs SIB.I				
positive outgoing	71	5.22***	35	4.67***
positive incoming	71	6.55***	35	5.78***
negative outgoing	71	-10.22***	35	-5.53***
negative incoming	71	-6.12***	35	-3.75***
Total involvement	71	-3.20**	35	-0.11
FATHER vs SIB.I				
positive outgoing	70	3.51***	32	2.71*
positive incoming	70	3.98***	32	4.97***
negative outgoing	70	-7.74***	32	-5.73***
negative incoming	70	-3.30**	32	-2.99**
Total involvement	70	-3.33***	32	-1.83

*=$p < .05$; **=$p < .01$; ***=$p < .001$.

Positive t-values indicate that the positive category is significantly larger; vice-versa for negative values.

TABLE 11.9: Relative psychological importance of the various family figures and Nobody for the two groups of control children at day schools

CHILDREN	SCHOOLS			
Response	O.D.C.		S.D.C.	
	No.	t-value+	No.	t-value
NOBODY vs MOTHER				
positive outgoing	38	1.21	38	-0.12
positive incoming	38	0.33	38	-0.87
negative outgoing	38	5.21***	38	6.12***
negative incoming	38	6.93***	38	6.51***
Total involvement	38	5.18***	38	3.65***
NOBODY vs FATHER				
positive outgoing	38	1.85	37	0.47
positive incoming	38	2.61*	37	0.55
negative outgoing	38	3.09**	37	4.42***
negative incoming	38	5.00***	37	4.84***
Total involvement	38	5.12***	37	3.52***
NOBODY vs SIB.I				
positive outgoing	36	2.98**	35	3.39**
positive incoming	36	3.05**	35	4.39***
negative outgoing	36	-1.41	35	-1.80
negative incoming	36	2.04*	35	1.81
Total involvement	36	1.94	35	2.04*
MOTHER vs FATHER				
positive outgoing	38	0.98	37	1.53
positive incoming	38	2.32*	37	2.18*
negative outgoing	38	-3.12**	37	-2.54*
negative incoming	38	-2.81**	37	-1.88
Total involvement	38	0.06	37	0.67
MOTHER vs SIB.I				
positive outgoing	36	2.83**	35	4.54***
positive incoming	36	3.03**	35	7.11***
negative outgoing	36	-6.21***	35	-8.40***
negative incoming	36	-4.15***	35	-4.45***
Total involvement	36	-2.58*	35	-1.88
FATHER vs SIB.I				
positive outgoing	36	1.53	34	3.35**
positive incoming	36	1.14	34	5.37***
negative outgoing	36	-4.56***	34	-6.52***
negative incoming	36	-2.18*	34	-2.46*
Total involvement	36	-2.83**	34	-1.82

*=p $<$.05; **=p $<$.01; ***=p $<$.001

Positive t-values indicate that the positive category is significantly larger; vice-versa for negative values.

There was a tendency for the control group to mention Sib I more frequently than any other family figure. The differences in the number of total responses for mother and Sib I and father and Sib I were statistically significant for the ODC group only.

Table 11.8 shows that when total responses were analysed for various response classifications, the control groups favoured the mothers when assigning positive feelings but preferred Sib I when distributing negative statements. The importance of father relative to Sib I was similar to that of mother, although the differential rate of outgoing and incoming positive responses for father and Sib I did not reach statistical significance in the case of the ODC group (Table 11.9).

Table 11.8 further shows that children at day schools were equally involved with both parents, but children at boarding school were more involved with their mothers. In all cases they equally often ascribed outgoing positive statements to mother as to father, but in their outgoing negative statements, the day children directed them preferably to father and the boarders to mother. However, in the case of the children at boarding school, the difference in their responses to both parents did not reach statistical significance. All the children perceived their mothers as more often positive towards them than their fathers; vice versa their fathers were viewed as more frequently negative.

Table 11.10 Relationship of positive and negative feelings to the various family figures and 'Nobody' for control children at day and residential schools.

Response categories	Schools: Day		Schools: Residential	
	No.	t-value[+]	No.	t-value
MOTHER				
0 + vs 0 -	76	10.26***	38	9.36***
I + vs I -	76	8.49***	38	7.59***
FATHER				
0 + vs 0 -	75	4.74***	34	5.73***
I + vs I -	75	2.88**	34	5.06***
SIB I				
0 + vs 0 -	71	-6.44***	35	-3.24**
I + vs I -	71	-4.36***	35	-2.04*
NOBODY				
0 + vs 0 -	76	-0.08	38	-3.98***
I + vs I -	76	-3.09**	38	-8.61***

*p $<$.05; **p $<$.01; ***p $<$.001

[+]Positive t-values indicate that the positive category is significantly larger; vice versa for negative values.

Relationship between positive and negative feelings.

The feelings of the control groups which involved the parents, particularly the mother were overwhelmingly positive, whereas feelings relating to Sib I were predominantly negative (Table 11.10 and 11.11). Feelings discarded into Mr. Nobody were predominantly negative for all control groups in relation to incoming feelings. Outgoing feelings to 'Nobody' were, however, mainly negative

in respect of the SRC group only.

Table 11.11 Relationship of positive and negative feelings to the various family figures and 'Nobody' for the two groups of control children at day schools.

Score	Schools			
	ODC		SDC	
	No.	t-value[+]	No.	t-value
MOTHER				
0 + vs 0 -	38	7.68***	38	7.22***
I + vs I -	38	6.01***	38	6.13***
FATHER				
0 + vs 0 -	38	2.74**	37	3.92***
I + vs I -	38	1.14	37	2.82**
SIB I				
0 + vs 0 -	36	-3.56***	35	-5.64***
I + vs I -	36	-2.43*	35	-3.74***
NOBODY				
0 + vs 0 -	38	0.60	38	-0.74
I + vs I -	38	-2.19*	38	-2.15*

*p $<$ .05; **p $<$ .01; ***p $<$ .001

[+] Positive t-values indicate that the positive category is significantly larger; vice versa for negative values.

Table 11.12 Reciprocity of feelings for each family figure and 'Nobody' for control children at day and residential schools.

Response categories	Schools			
	Day		Residential	
	No.	t-value	No.	t-value
MOTHER				
0 + vs I +	76	-1.41	38	-0.33
0 - vs I -	76	-4.38***	38	-1.16
FATHER				
0 + vs I +	75	1.49	34	1.05
0 - vs I -	75	-2.96**	34	-4.40***
SIB I				
0 + vs I +	71	1.43	35	1.41
0 - vs I -	71	7.30***	35	3.68***
NOBODY				
0 + vs I +	76	1.37	38	2.50*
0 - vs I -	76	-3.30***	38	-2.01

*p < .05; **p < .01; ***p < .001

+Positive t-values indicate that the positive category is significantly larger; vice versa for negative values.

Relationship between outgoing and incoming feelings.

The positive feelings which the control group had towards the parents and Sib I were closely related to the positive feelings which they believed the parents and Sib I had towards them (Table 11.12). The negative feelings tended not, to be reciprocated. More incoming than outgoing negative references were made to the parents, although the differences were statistically significant only for the

ODC and SDC groups in respect of mother and for the SDC and SRC with respect to father. Reference to Table 11.12 and 11.13 reveals that Sib I received from all control groups significantly more outgoing than incoming negative responses.

Table 11.13 Reciprocity of feelings for each family figure and 'Nobody' for the two groups of control children at day schools.

Response categories	Groups			
	ODC		SDC	
	No.	t-value[+]	No.	t-value
MOTHER				
0 + vs I +	38	-0.58	38	-1.42
0 - vs I -	38	-2.48*	38	-3.66***
FATHER				
0 + vs I +	38	1.84	37	0.24
0 - vs I -	38	-1.62	37	-2.50*
SIB I				
0 + vs I +	36	1.01	35	1.01
0 - vs I -	36	4.05***	35	6.49***
NOBODY				
0 + vs I +	38	1.26	38	0.60
0 - vs I -	38	-3.02**	38	-1.56

*p < .05; **p < .01; ***p < .001

+ Positive t-values indicate that the positive category is significantly larger; vice versa for negative values.

Factors affecting family relationships.

Demographic details of the control children when correlated with response categories of the Family Relations Test, showed a slight tendency for children of good socio-economic background to discard more negative items into 'Nobody' than did their peers of low social class. The Pearson coefficients of correlation between social class and outgoing negative feelings to Mr. Nobody was -.28 (df 112, $p < .01$), and that between social class and incoming negative feelings from Mr. Nobody was -.26 (df 112, $p < .01$).

A similar and equally significant pattern of results was noted when the children's environmental home circumstances were considered. Children from unfavourable environmental home circumstances tended, to express greater involvement with self ($r = .20$, df 112, $p < .05$) and to make more negative references to father ($r = .22$, df 112, $p < .05$) than did children from 'good' homes.

Family size affected the distribution of the test items. As might be expected low scores in the various response categories were found more frequently among children from large than from small families. For example, the coefficients obtained by correlating total involvement with father and mother with family size were -.43 (df 112, $p < .001$) and -.46 (df 112, $p < .001$) respectively.

Reference to Table 11.14 shows that the children with high scores on the adjustment scales (C.T.P.) were more likely than were those with low scores to feel positive

about their fathers and to believe that this was reciprocated. Discarding negative items into Mr. Nobody was more common of the better adjusted children. Perceived relationship with mother was found to reflect the children's adjustment.

Table 11.14 Pearson correlation coefficients for family relationships (Bene-Anthony) and adjustment for control children.

	Adjustment		
Response categories	Emotional adjustment	Social adjustment	Total adjustment
NOBODY (N=114)			
Outgoing Positive	.19*	.05	.13
Outgoing Negative	.33***	.38***	.38***
Incoming Positive	.11	-.01	.05
Incoming Negative	.38***	.41***	.43***
Total Involvement	.37***	.33***	.37***
MOTHER (N=114)			
Outgoing Positive	.00	.18*	.10
Outgoing Negative	-.01	-.13	-.07
Incoming Positive	.09	.16	.13
Incoming Negative	.08	.01	.05
Total Involvement	.06	.15	.11
FATHER (N=109)			
Outgoing Positive	.14	.27**	.22*
Outgoing Negative	-.32***	-.29**	-.33***
Incoming Positive	.25**	.25**	.27**
Incoming Negative	-.25**	-.33***	-.31***
Total Involvement	.01	.07	.04

df n = 2; *p <.05; **p <.01; ***p <.001

Total involvement with Nobody showed a relationship to neuroticism ($r = -.26$, df 112, $p < .01$). Children with low scores on the neuroticism scale (indication of stability) were more likely than those with high scores to discard negative items, both incoming ($r = -.19$, df 112, $p < .05$) and outgoing ($r = -.24$, df 112, $p < .01$) into 'Nobody'.

Comparison of handicapped and control children.

Reference to Table 11.15 shows that differences of statistical significance were not found for any of the response categories between physically handicapped children attending Ordinary Day schools and their controls.

Table 11.15 Comparison of PH at Ordinary Day schools and their controls on the Family Relations test.

Family figures	Total mentions	t-values[+] 0+	0-	I+	I-
Mother (N=38)	1.50	0.63	0.71	1.14	0.79
Father (N=38)	1.67	0.49	0.72	1.40	0.71
Sib I (N=34)	1.07	0.97	0.03	1.48	0.92
Nobody (N=38)	-1.24	-1.44	1.12	-1.89	-1.27

[+]A negative t-value indicates that the mean score was higher for the controls than the PH children; vice versa for positive values.

Statistically significant differences did not occur in the feelings towards the parents of physically handicapped children at Special Day schools as compared with those of the controls (Table 11.16). The physically handicapped group, however, gave more positive statements (both outgoing and incoming) and made fewer outgoing negative references to the eldest sibling than did the control group. Table 11.16 further shows that the attribution of incoming positive statements to 'Nobody' from the physically handicapped group was less than from the control sample.

Table 11.16 Comparison of PH at Special Day school and their controls on the Family Relations test.

Family figures	Total mentions	t-values[+] 0+	0-	I+	I-
Mother (N=27)	1.45	1.04	0.65	1.60	0.14
Father (N=35)	-0.23	-0.78	0.81	-0.37	-0.15
Sib I (N=34)	0.41	2.65*	-1.96*	2.36*	-0.36
Self (N=38)	0.62	1.52	-0.82	-	-
Nobody (N=38)	0.04	-1.77	1.51	-2.34*	0.96

df = n - 1; *$p < .05$

[+]Negative t-value indicates that the controls obtained a higher mean score than the PH group; vice versa for positive values.

When physically handicapped children at Special Residential schools were compared with their controls at boarding schools the only differences of statistical significance which were found in their attitudes to their parents were those relating to their outgoing negative feelings to father (Table 11.17). The physically handicapped children placed, however, more positive outgoing and incoming feelings with the eldest sibling than did the control group.

Table 11.17 Comparison of PH children at Special Residential schools and their controls on the Family Relations test.

Family figures	Total mentions	t-values+ 0+	0-	I+	I-
Mother (N=37)	0.46	-0.66	1.33	0.70	0.65
Father (N=37)	1.44	0.09	3.15**	0.98	1.73
Sib I (N=30)	2.25*	4.91***	-1.61	4.12***	0.32
Nobody (N=38)	-2.32	-2.83**	-0.21	-2.71**	-1.83

df n - 1; *p < .05; **p < .01; ***p < .001

+A negative t-value indicates that the mean score was higher for the controls than the PH children; vice versa for positive values.

From Table 11.17 it can further be seen that the boarding school control children discarded significantly more statements into 'Nobody' than did physically

handicapped children, the differences between the two groups being particularly pronounced in respect of positive feelings, both outgoing and incoming.

CHAPTER 12

SUMMARY OF RESULTS

Before considering the interpretation of the results and a discussion thereon, a brief overall summary of the statistically significant results is provided. All the results concerning the three groups of physically handicapped children are summarised. This is followed by the results from the control groups and finally those which provide a comparative assessment of each PH group and its control group. In this way it is hoped to overcome the inevitable disjointed effect which has arisen by presentation of the results in separate sections.

Physically handicapped children

The three groups of handicapped children were similar in respect of age, sex, family size, ordinal position, social class, environmental home circumstances and verbal and non-verbal intelligence. Severity and visibility of handicap varied among the children. Physically handicapped children attending the ordinary day schools had disabilities which were both milder and less visible than had those attending special day and residential schools. The main effect of the disability

on the children's functioning was the same for the children at the different types of school. The most common effect was impaired mobility followed by impaired hand control.

Neurological abnormalities were found with equal frequency among the three groups of children. Cerebral palsy was the most common type among PH children at ordinary and special day schools and spina bifida with hydrocephalus among those at special residential schools.* Absenteeism was similar in the three types of school.

The results from the California Test of Personality indicated that there was no significant relationship between the type of school attended by the handicapped children and overall adjustment. Analysis of the emotional adjustment component suggested that all the children were equally well adjusted. This was also true for overall social adjustment, although some differences were found in anti-social tendencies, with the children at special day schools showing fewer anti-social tendencies than those at ordinary day schools.

The factors extraversion and neuroticism as measured by Eysenck Personality Inventory did not yield any significant differences among PH children at the three types of school. However, the lie scale gave rise to differences: the children at ordinary day school "lied less" than did children at special schools, both day and residential.

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* There was a difference in the distribution of unilateral and bilateral brain lesions.

The teachers' assessments of the children's social adjustment (BSAG) were similar for the three groups. However, the "syndrome" which most characterised each group was different. Physically handicapped children at ordinary day school were most frequently described as hostile to adults. "Unforthcomingness" was most frequently reported in respect of children at special day schools. Anxiety and uncertainty about adult interest and affection was most common in children at special residential schools.

The results from Barker Lunn's Attitudes to School scales suggested that differences occurred on only one of the scales, i.e. "other"image of class . The children at special day schools had a better image of their class than had children at ordinary day schools.

Tests of attainment in reading and arithmetic yielded differences between groups. Children at ordinary day schools were better at both reading and arithmetic than were those at the other types of school. Parents' attitudes to child-rearing (Shoben's Parent Attitude Survey) were similar between groups.

With the exception of "Mr. Nobody" no between-group differences occurred on the Bene-Anthony Family Relations Test. Differences in feelings which occurred among children in relation to Mr. Nobody were negative, both incoming and outgoing. Those at special residential schools assigned more negative outgoing feelings to him

than did those at ordinary day schools. On the other hand, children at ordinary day schools distributed less incoming negative items to Mr. Nobody than did those at the other types of schools. However, certain within-group differences were observed. Children at special day schools were more totally involved with their mothers than with their fathers. They were also predominantly positive in their feelings about themselves. Those at both ordinary and special day schools expressed more negative attitudes toward their fathers than toward their mothers. Furthermore, children at ordinary day and those at special residential schools perceived their fathers as feeling more negatively toward them than did their mothers.

Further within-group differences in the Bene-Anthony Family Relations Test included discrepancies between the outgoing and incoming positive feelings to mother among children at special residential schools, incoming feelings predominating. Children at special day schools showed a discrepancy in the same direction but with regard to negative feelings. Finally, a greater proportion of incoming than outgoing statements were directed toward the eldest sibling by children at ordinary day schools.

Demographic details and their effect on the measures used in the present study.

Age

Age was not related to any variable other than neuroticism. The relationship was not linear, in that the ten-year-olds were more neurotic than both the nine and the eleven-year-olds.

Sex

Girls was assessed by the teachers as being significantly better adjusted than boys. When the separate physically handicapped groups were analysed differences between sexes were significant only for the children at ordinary day schools. Girls in special day schools held more favourable attitudes to school than did the boys. Interaction effects were found between sex of the child and type of school attended in respect of anxiety in the classroom and of reading attainment. Physically handicapped boys at ordinary day school were more anxious than girls whereas in special schools, both day and residential, boys were less anxious than the girls. Boys at ordinary day and special residential schools were better able to read than were girls, the reverse being true of children at special day schools. Boys at ordinary day school were also significantly better

at arithmetic as compared with the girls.

Family size and ordinal position

Family size showed some relationship with paternal attitudes to child-rearing. Fathers with large families tended to have the most unhealthy attitudes. Ordinal position did not affect any of the measures.

Social class

Social class was statistically related to school attainment, children from upper socio-economic backgrounds tending to be better at both reading and arithmetic. Socio-economic status was also found to affect maternal and paternal attitudes to child-rearing. Parents from the lower socio-economic groups had more unhealthy attitudes to children, that is they were more ignoring, dominant and possessive than were those from the higher classes. It was also noted that children from the lower socio-economic backgrounds felt their mothers to be more negative towards them than did those from the higher social classes.

Environmental home circumstances

Environmental home circumstances too influenced educational attainment; children from favourable home environments were more adept at reading and arithmetic

than were those from unfavourable homes. In addition, a relationship between environmental home circumstances and social adjustment (Bristol Social Adjustment Guides) was found. Children from unfavourable home backgrounds were rated as being the more unstable.

Intellectual ability

Intelligence, both verbal and nonverbal, showed a relationship with certain aspects of personality, adjustment and educational attainment. Bright children were more likely than the dull ones to be better adjusted socially (C.T.P.; Barker Lunn, BSAG), emotionally (C.T.P.; and J.F.P.J.), to be more extraverted, to "lie" less, to be less anxious in the classroom, to show more interest in school work, to have a more positive academic self-image and to be better at reading and arithmetic.

Severity of disability

Severity of disability showed an association with academic self-image and interest in school work, children with mild handicaps being more likely than those with moderate or severe ones to have a more positive academic self-image and to show more interest in school work. A relationship was also found between the mother's attitudes to child-rearing and the severity of the children's disability; mothers of children with mild disabilities tended to have the more "unhealthy" attitude.

Visibility of disability

"Importance of doing well" was the only measure to yield a significant relationship with the visual impact of disability. The greater the visual impact, the more likely the children were to place importance on doing well in school.

Major functional effect of handicap

Children with impaired hand control only had a better relationship with their teacher and held a more favourable "other" image of their class than did children with impaired mobility.

Neurological abnormalities

Children with neurological abnormalities differed from the neurologically normal on only two measures; the neurologically abnormal children lied more frequently and were more anxious in the classroom than were the neurologically normal. When the three physically handicapped groups were considered separately the difference in lie scores were significant only in respect of children at special residential schools. In the case of anxiety in the classroom the differences were significant only in the children at special day schools.

Control children

Children at both day and residential schools were similar in respect of age, sex, family size, ordinal position and non-verbal intelligence. However, differences were found in respect of social class, environmental home circumstances and verbal intelligence. Children at residential schools had higher socio-economic backgrounds, more favourable home circumstances and were better verbally .

Results from the California Test of Personality yielded no significant differences in overall adjustment between children at day and residential schools. Furthermore, there were no differences between the two groups in their overall social and emotional adjustment. However, family relationships were stronger in children at boarding school than in those at day schools. Boarding school children were also more free from nervous symptoms.

There were no differences between the two groups of children in respect of extraversion, neuroticism and "faking good" (J.E.P.I.). Moreover, the teachers rated the children to be equally well adjusted (BSAG). "Unforthcomingness" was the syndrome most frequently said to characterise them. "Anxiety in the classroom" was the only one of Barker Lunn's ten attitude scales which discriminated between the two groups of children, the children at day school being the less anxious.

In school attainment children at boarding schools were significantly better at reading than were those at day schools but no differences were found in their arithmetical ability.

The Bene-Anthony Family Relations Test revealed that children at day school were more critical of their fathers than were those who were at boarding schools. Children at boarding schools assigned more negative statements into Mr. Nobody than did those at day schools.

Again, as with the disabled children, some within-group differences were found. Mention of these differences will be made only when the pattern of results differs for the two groups.

Children attending residential schools expressed more involvement with their mothers than with their fathers while children at day schools were more involved with the eldest sibling than with their mother or father. Children at day schools expressed more negative feelings about their fathers than their mothers and believed these feelings to be reciprocated. In addition, these children did not reciprocate the negative feelings which they considered their mothers had for them.

Demographic details and their effect on the measures

Age

Relationships were found between age and attitudes to school, conforming behaviour, "faking good" and arithmetical skills. Nine-year-old children were more likely than ten or eleven-year-olds to have more positive attitudes to school, to conform better, to lie more and to be better at arithmetic.

Sex

Differences between the sexes were found in respect of emotional stability (C.T.P. and J.E.P.I), the boys being the more stable and better adjusted. The boys also regarded themselves as being better adjusted socially on the Barker Lunn scales. Girls, on the other hand, expressed more positive attitudes to school, placing greater importance on doing well, being more interested in school work and generally holding more favourable attitudes towards their class. Some additional differences were found between sexes in reading and arithmetic, the boys being the more competent. A statistically significant interaction effect was found between sex, type of school attended and academic self-image. The girls at day school had a more positive academic self-image than had those at boarding schools

whilst the opposite was true of the boys.

Family size and ordinal position

Social relationships of children at ordinary day schools were related to family size and ordinal position. Children from small size families with high ordinal positions were the most popular among the classmates. It was also found that children at both day and residential schools from small size families with high ordinal positions were more likely to be better adjusted socially and emotionally (J.E.P.I.; C.T.P.). They also tended to be more extraverted (J.E.P.I.) and to lie less (J.E.P.I.). Furthermore, good arithmetical skills tended to be attained by children of high ordinal positions in small sized families.

Social class

The position with regard to social class was that children from the upper socio-economic backgrounds were more likely than those from the lower classes to be well adjusted, both socially and emotionally, to place greater importance on doing well and to hold more favourable attitudes about their class. Attainments in reading and arithmetic were also higher among these children. Some relationships were also noted between social class and parental attitudes to child-rearing.

Both mothers and fathers of low socio-economic status tended to have the more "unhealthy" attitudes.

Environmental home circumstances

Children from favourable home environments were assessed by their teachers as being better adjusted socially than were those from unfavourable homes. This trend was also apparent in the children's self reports (C.T.P.). In addition children with more favourable home circumstances, placed greater importance on doing well in school as well as holding more positive attitudes to school. They also were more popular among the class-mates (ordinary day school only) and more successful educationally.

Intelligence

Both verbal and non-verbal intelligence correlated positively with many aspects of personality, adjustment and attainment. Intellectually bright children were more likely than dull ones to be better adjusted, both socially (C.T.P., Barker Lunn and BSAG) and emotionally (C.T.P. and J.E.P.I.). They were also regarded as more popular by their peer group (ordinary day school only), and to be better at reading and arithmetic. A good relationship with teacher (Lunn's scales) was particularly marked from children with high verbal skills.

School absence

Frequent school absences correlated with poor scholastic achievement.

Handicapped children and their controls

PH children at ordinary day schools and their controls

There were no statistically significant differences between physically handicapped children at ordinary day schools and their controls in respect of overall social and emotional adjustment (.C.T.P.). Nor did Eysenck's Personality Inventory yield any differences. However, teachers assessed the physically handicapped children as socially more unstable than the controls; they were also regarded as being less popular by their peer group. In respect of Barker Lunn's scales, the only difference to emerge was that relating to "importance of doing well", the controls placing the greater emphasis on this characteristic.

There were no differences in the educational attainment of the two groups of children. Neither were there any differences in the parents' child-rearing attitudes or in the children's perceived family relationships.

PH children at special day schools and their controls

There were no differences between the two groups of children in respect of overall adjustment, whether social or emotional. However, the handicapped children expressed greater freedom from anti-social tendencies than did their controls. On the J.E.P.I. differences in the Lie scale were found, the controls lying less. Teachers' assessments of the children's social adjustment were similar. On the Barker Lunn's scale, "other image of class", the handicapped children had the more positive attitudes.

In educational attainment the handicapped children were consistently poorer, both in reading and in arithmetic. When the effects of verbal intelligence were partialled out the discrepancies remained significant.

Parental attitudes to child-rearing yielded no significant differences between the groups. The only differences which were found in the case of the children's perceived family relationships were those feelings pertaining to the eldest sibling and Mr. Nobody: the handicapped children felt more positive about their eldest sibling than did the controls. They also posted fewer incoming positive items to Mr. Nobody.

PH children at special residential schools and their controls

No differences were observed between the two groups for overall adjustment, whether social or emotional. However, differences occurred in the case of social standards, family relationships and sense of personal freedom, the control children obtaining higher scores. A difference in the J.E.P.I. lie scores was found, the handicapped children having the higher scores. On the Barker Lunn scales, the physically handicapped children were more conforming than were the controls. Teachers' assessments of the children's adjustments yielded no significant differences.

In the case of school attainment the physically handicapped children were considerably poorer than were the controls. The differences in reading and arithmetic remained significant after the effects of non-verbal intelligence were removed. However, the differences were greatly narrowed and no longer statistically significant when the effects of verbal intelligence were partialled out.

The position in respect of the children's perceived family relationships showed that while the handicapped children expressed more negative feelings to the father, they showed more positive feelings to the eldest sibling and to themselves than did the controls. They also distributed fewer incoming positive statements to Mr. Nobody.

IV DISCUSSION

CHAPTER 13

INTERPRETATION OF RESULTS AND DISCUSSION

The central theme of the present study has been the assessment of social and emotional adjustment of physically handicapped children of normal intelligence in ordinary and in special schools, both day and residential. The research analysed various aspects of personality, adjustment, school related attitudes, family relationships and educational attainment in a sample of nine to eleven year old children with visible physical handicaps affecting movement. The study was undertaken to clarify the nature of relationships which might exist between a child's adjustment and the type of school attended.

Sample characteristics of physically handicapped children

Considerable data are available in the literature demonstrating the association between many psychosocial features and the behaviour and development of children. Sociological variables such as order of birth, family size, marital relations of the parents and social class are all of potential significance in the cognitive development and general personality of the child. The precise influence of such variables remains to be clearly established. In order to ensure comparability of results in this study, where the independent variable is type of school attended

and the dependent variable is adjustment of the child, attention must be given to controlling or removing the extraneous variation which could affect the dependent variable. From examination of the sample characteristics it was seen that the three handicapped groups were similar in respect of age, sex, family size, ordinal position, social class, environmental home circumstances and intellectual ability, both verbal and non-verbal. Discrepancies were found in relation to type of disability, and to the visibility and severity of the handicap. Cerebral palsy was the most common disability in children at both ordinary and special day schools, while spina bifida with hydrocephalus was the most common condition in those attending special residential schools. Now emotional disorder more commonly occurs in children with cerebral palsy than in the non-handicapped, although it is not yet possible to say whether or not this is the case for those with spina bifida (Pilling, 1973a; 1973b). It was pointed out in the review of the literature that no definitive relationship has been found between type of disability and that of any specific psychiatric disorder or educational deficit. A more important factor than type of disability has been the presence or absence of neurological abnormalities, which have been reported as influencing the psychological and social development of handicapped children. In this study the proportion of disabled children with neurological involvement was fortuitously (about 55%) the same in each of the three groups

of handicapped children.*

To find discrepancies in the severity of handicap among the disabled children was to be expected in view of the existing educational policies on integration and segretation. A higher proportion of children with mild than severe handicaps were found in ordinary schools. This pattern was also true in regard to visibility of handicap. It might be argued that the more severe and visible the disability, the more difficult it might be for the afflicted child to achieve good adjustment. However some of the findings in the literature dispute this. Although some studies have shown a relationship between degree of disability and poor adjustment, other studies have shown no relationship, and still others have shown a reverse relationship (Wright, 1960). The effect of the visual impact of handicap is also uncertain. Few investigators have differentiated between the degree of visual impact and the severity of handicap; the two dimensions are often regarded as synonomous. In the present study relationships of statistical significance were not found between either severity or visibility of handicap and adjustment, whether social or emotional. This confirms the inconsistent relationships occurring in the literature. Inconsistent findings, however, may stem from the different criteria used for measuring adjustment and personality. Certain school-related attitudes showed some association with the two dimensions. These relationships will be discussed later.

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* Discrepancies were found in the nature of neurological abnormality. Unilateral brain lesions were the most common in children at ordinary schools, while bilateral lesions were the most common condition in those attending special schools. However, there was no statistical significant relationships between these abnormalities and the childrens' adjustment and educational attainments.

Sample characteristics of control children

The sample characteristics of the control children at both day and residential schools showed discrepancies in respect of social class, environmental home circumstances and verbal intelligence. These differences which favoured children at boarding schools, were to be expected in view of the fact that such schools which participated in this study were, with only one exception, all independent with an intake of pupils almost exclusively from families of high income.

The higher verbal intelligence in children at boarding school was also to be expected in view of the relationship which has been found between social class and verbal ability (Bernstein, 1961). It might be argued that these discrepant sample characteristics has some bearing on the present results. However, interpretation of any between-group differences takes this factor into account.

An additional important part of this study is an evaluation of the progress of physically handicapped children as compared with normal children in the different schools. To minimise the presence of features other than the physical handicap per se, care was taken to match the handicapped and the normal children on those sociological and psychological variables which are known to influence the dependent variable.

Sample characteristics of handicapped children and their controls.

Examination of the sample details indicated that matching was successful on the following variables: age, sex, family size, ordinal position in family, social class and environmental home circumstances. However, controlling for intelligence created problems. The differences in intelligence, both verbal and non-verbal, between the handicapped at special residential schools and their controls at normal boarding schools were unfortunately unavoidable. As mentioned earlier these were probably due to the highly selected population from which boarding schools draw their pupils.

The difference which was found in verbal ability between physically handicapped children at special day schools and their controls is more difficult to explain. It could reflect differences in educational opportunity determined to some extent by the handicap. Frequent hospitalisations from infancy and convalescences at home may have restricted the social contact of the handicapped child, thus depriving it of a whole range of potential learning. However, once again, the extraneous variation which this factor may cause in the dependent variable will be taken into consideration.

The above demonstrates the compatability of the handicapped and control groups in some important psychosocial factors which are known to influence the dependent variables.

Effect of the family on adjustment

The single greatest influence on psychological development, is however, the family. Hoffman and Lippitt (1960) provide an excellent analysis of the complexity of family life and the difficulty which this poses for the research worker. The aspects of family life which they suggest as contributors to psychological development are: parental background, current family setting, family composition, relationship with the parents, personal characteristics of the parents, child-oriented parental attitudes, overt parental behaviour patterns, child's orientation toward parent and siblings and overt child behaviour toward other family members.

It was beyond the scope of this study to take into consideration all these aspects of family life. The parents' attitudes to child-rearing and the child's perception of his family relationships were selected in view of the link which has been noted between these two dimensions of family life and child adjustment. In addition, ready measures were available to provide the relevant information.

Investigation of the child-family relationship was undertaken in order to establish the role of the school in relation to the family and it's contribution to the child's adjustment. If any importance is to be attached to the findings it is necessary to establish whether significant relationships were found between the measures and adjustment.

Parental attitudes to child rearing

Parental attitudes to child rearing, have been subject to considerable scrutiny. Investigators have failed to find a consistent relationship between parents' attitudes and personality adjustment in the children. The finding of significant relationships among physically handicapped children in this study are at variance with those of Burchinal (1958), who found (after using the C.T.P. and the Shoben's P.A.S.) that no measurable relationship existed between parental attitudes and child adjustment. Closer examination of Burchinal's coefficients demonstrates that although these failed to reach statistical significance they were all in the expected direction. The lack of statistical significance might have been due to the size of his sample, which was only 38 per cent of the intended size. Furthermore sample bias may have affected the results. For example, teachers were requested to exclude children whom they thought might be unable to read the questionnaire. In view of the well-known relationship between school attainment and adjustment the quitted children may have reflected those who were poorly adjusted. Thus Burchinal's sample may not have provided a wide enough range of adjustment problems to test the hypothesis under study.

The present results in respect of the physically handicapped children are in accord with those of Neuhaus (1969).

With a group of deaf children she found significant relationships between emotional adjustment and paternal attitudes (total scores on the Shoben's P.A.S.). However, her correlation coefficients were of considerably greater magnitude than those reported here. This may be a reflection of differences in the characteristics of the dependent variable which was used in the two studies. Many of the inconsistencies in earlier studies might be due to the fact that the particular characteristics measured were not the crucial parent-child interaction or interrelationship variables. Support for this interpretation may be gained from the lack of relationships in this study between parental attitudes and teachers' assessment of adjustment or children's own self-reports as to extraversion and neuroticism.

The finding that poor adjustment was related more to the tendency for parents to ignore their children than to the other characteristics of dominance and possessiveness, suggests that 'ignoring' may be more harmful to a handicapped child. There is possibly a wider margin of safety in the other two types of behaviour, both of which may be necessary evils for the welfare of a handicapped child in view of his greater dependence on parents.

The finding of more 'unhealthy attitudes' in mothers than in fathers of physically handicapped children may be a reflection of the greater responsibility a mother must assume for the care of her child. Meeting the needs

of a handicapped child must of necessity be one of controlling and structuring. Thus, after years of implementing a regime of child-rearing characterised by directing and structuring the activities of a physically handicapped child, it is to be expected that items describing this type of behaviour would not be completely denied. There is also, the possibility that such attitudes stem from the frequently reported feelings of guilt, shame, ambivalence and confusion which arise from being the parent of a physically handicapped child.

However, the effects which these incongruent parental attitudes may have had on the adjustment of the physically handicapped children was not determined in this work, as relationships between the two variables were not examined. Speculation is also difficult in view of the paucity of documentation on the effects on child adjustment of incongruent attitudes to child-rearing. It is of interest that Leton (1958) found a greater discrepancy between attitude scores of parents of poorly-adjusted children than between those of well-adjusted children.

The fact that significant relationships between any of the personality and adjustment measures and parental attitudes did not occur in the control children raises certain questions. If generally-held assumptions concerning the influence of parent-child relationships on the child's personality are accepted, then it could be argued that the lack of association between the variables stems

from inadequate measurement. Examination of the validity of the personality and adjustment measures employed in this study does not question their usefulness. However, doubts have been expressed as to the validity of the Shoben's Parent-Attitude-Survey (Gordon, 1957; Leton, 1958). The fact that relationships were found in the present sample of physically handicapped children suggests a variance as to these doubts.

As already stated the sample size of the control group was small. Furthermore, the children of non-respondent parents had less favourable home environments; they tended to score lower on the adjustment measures; they were of lower intelligence, and also tended to have lower attainments in reading and arithmetic. From this it could be argued that the lack of significant relationships between adjustment and parental attitudes in the controls might be due to the small size and the relative uniformity of the group.

It might also be argued that normal children are less susceptible than handicapped children to parental attitudes and family relationships. Gulliford (1971) pointed out that emotional experiences provided by the family are likely to be intensified in a child with a handicap. This is probably due to a more limited range of emotional and social experience. If the behaviour of normal children is regarded as being the product of wider influences than that of handicapped children, lower correlations would

be expected for normal children between single-child rearing dimensions and measures of child behaviour.

The finding that there were no significant differences in parental attitudes in any of the groups of handicapped and control children suggests that the present sample came from families which were homogeneous in their attitudes to child-rearing. The proportion of variation in adjustment explained by parental attitudes among the different groups should be similar. However, in view of the inconclusive nature of the relationships between parental attitudes and the control children's adjustment, any prediction must be regarded as tentative.

Children's perception of family relationships.

Serot and Teevan (1961) claimed that a child's perception of his family relationships is more related to his adjustment than to an objective measurement of parental attitudes. Support for this claim may be gained from examination of the results obtained from the Bene-Anthony Family Relations Test. The children, both handicapped and controls, who scored high on the adjustment measures were more likely than those with low scores to express positive feelings about their parents and to perceive their parents as feeling positively towards them. In addition, the well-adjusted child tended to discard more negative statements into 'Mr. Nobody' than did the less well adjusted child.

It was argued earlier that disabled children may be more influenced by their parents than are normal children

This may be due to more intense interrelationships. The finding of stronger correlations between perceived parent relations and adjustment in physically handicapped children as compared with the controls provides additional support for this view.

The finding of stronger relationships between adjustment and father-child relations than between adjustment and mother-child relations among both handicapped and control children is open to several interpretations. One possible explanation is that a child is more susceptible to the behaviour of his father than of his mother. Little evidence, however, is available to support this contention although the role of the father in affecting the child has recently received attention (Johnson and Medinnus, 1974). It is generally accepted that children are emotionally more involved with their mothers than with their fathers. For this reason mothers may be perceived in a more unrealistic manner, i.e. through "rose-tinted spectacles". Examination of the relative psychological importance of the various family members for each individual group of children in this study did not provide consistent evidence of greater involvement with mothers than with fathers. However, in view of the cultural expectations of a close relationship between mother and child it could well be that children are more sensitive and defensive about revealing the negative aspects of their maternal relationship. Perhaps for a child to reveal negative feelings about his

mother may seem like a personal indictment of himself. It will be remembered that there was a tendency for physically handicapped children with high lie scale scores (J.E.P.I.) to assign less outgoing negative items to mother. This suggests that there may have been some deliberate attempt to present a desirable image.

It is of interest that the teachers' assessment of the children's adjustment did not correlate positively with the children's perception of their family relations. This is probably because the criteria used for evaluating adjustment are different. It is possible that teachers judge adjustment on the basis of achievement and conformity. For example, Drews and Teahan (1957), found high academic achievement associated with negative parental behaviour.

It appears from the available evidence that the Bene-Anthony Family Relations test may reasonably be expected to provide a useful indication of adjustment.

Comparative results of the Bene-Anthony Family Relations Test.

It was hoped that the results would provide some indication of the relative influence of the families on their adjustment. The only between-group differences found among the disabled children in the three types of school were those relating to Mr. Nobody. Children at special residential schools assigned significantly more

outgoing negative statements to Mr. Nobody than did those at ordinary day schools. The special residential school children also discarded incoming negative feelings to Mr. Nobody with greater frequency, than did children at day schools, whether ordinary or special.

It will be remembered that a relationship was found between negative responses to Mr. Nobody and adjustment. Children who discarded more statements to Mr. Nobody tended to be the better adjusted. Accordingly, it might be inferred that children at special residential schools were the better adjusted of the physically handicapped children. However there is no evidence from the various adjustment and personality measures to confirm this view. It is possible that residential school children have greater difficulty in expressing hostile and aggressive feelings towards their families. To be separated from the family may pose a serious threat to the self-concept and to result in heightened psychological defenses. Moss (1966) discussed the manner in which children who were placed away from home seemed to be unaware of their parents' inadequacies and to deny any negative feelings which might indict themselves or their parents.

The pattern of results for the controls were similar to those for physically handicapped children. Children at boarding school discarded a greater proportion of negative feelings to Mr. Nobody than did those at day schools. In addition, boarding school children expressed

fewer outgoing negative feelings about father than did those at day schools. A similar interpretation to the above can be applied. An alternative explanation is that the difference in social class and environmental home circumstances which favoured children at boarding schools may have been a source of variation. Bene and Anthony (1957) believe that inhibition is the prerogative of the middle class. The greater assignment of negative feelings to Mr. Nobody and the small proportion of negative feelings shown to father may reflect this greater inhibition.

It is of course also possible that a child away from home, whether handicapped or not, may idealise his feelings toward the family. This could be a result of reduced exposure to daily parental pressure and family friction.

Comparison of perceptions of family relationship between handicapped children and their controls yielded few differences. The greater proportion of positive feelings shown to the eldest sibling by the physically handicapped at special day schools as compared with their controls may be a result of less friction with siblings. In Scotland Woodburn (1975) found in interviews with mothers of spina bifida children that 14 per cent believed the presence of a physically handicapped child in the family to have produced greater sensitivity and understanding among the siblings. On the other hand, the finding could reflect a less healthy relationship with siblings. It is possible

that psychological defences had been established to cope with the painful realities of their psychological world.

Greater idealisation on the part of physically handicapped children at special schools, both day and residential, may have caused their assignment of less incoming positive feelings to 'Mr. Nobody' than was the case in the controls. Bene and Anthony (1957) stated in their test manual that idealisation is indicated by an exaggerated use of positive items for members of the family while placing most negative items into 'Mr. Nobody'. Figure 11.2 portrays this pattern of response.

The finding that handicapped children at special residential school expressed greater hostility to their mothers than did their controls is open to several interpretations. It is possible that the perceptions represent the true state of affairs, i.e. that the mothers of disabled children at special residential schools are more rejecting and hostile than are those of the controls. On the other hand, these feelings may reflect an attitude resulting from separation from home. The manner in which a child interprets going away from home may be dependent to some extent on his social grouping. Children whose family tradition involves going to boarding school may more easily accept the idea of separation, whereas those who perceive going away from home as being 'put away' may feel greater resentment. It will be remembered that the controls were from higher socio-economic backgrounds than were the physically

handicapped children. This factor may also have caused a greater inhibition of feelings in the controls.

From the data discussed few differences are apparent in children's perceptions of their family relationship. It is difficult to draw conclusions from the differences found, about the children's personality and adjustment. Bene and Anthony (1957) state that such conclusions should be made on the basis of a theory of personality which is above and beyond the test itself. However, it does appear that the level of adjustment of the physically handicapp d children and their controls are reasonably homogeneous in view of the uniformity of their perceptions.

The within group differences showed strong similarities for the individual groups of disabled and control children. A comparison of the within-group differences of separate groups with the available normative data indicates that the distribution of positive and negative feelings among family figures were similar in configuration to the distribution of feelings reported for samples of normal children (Frost, 1969; Kauffman, 1971). In other words, most responses tended to be assigned to 'Mr. Nobody' and in the family constellation the parent figures, particularly the mother, tended to be the focus of positive feelings while siblings tended to be recipients of most negative feelings. This finding indicates further that the family psychodynamics of individual groups of children in this study are not only homogeneous but are also representative of normal families.

Similar conclusions were drawn earlier on the basis of parental attitudes to child rearing. However, in view of the stronger and more consistent relationships which were found between the children's perception of their families and their personality and adjustment, it is possible to place greater confidence in the conclusions offered.

In the review of the literature attention was directed to the few studies undertaken to determine whether disabled children are better placed in normal or in special schools. The results obtained from a small number of investigators have been inconsistent and conclusions are varied. Some support segregation, believing that physically handicapped children form better self-concepts away from the competition and attitudes of non-handicapped children and that better learning will ensue through the use of trained personnel and special equipment. On the other hand, there are the firm believers in integration, who claim: better self-concepts, competition and social and emotional adjustment.

Children's own assessments of adjustment

The only difference to emerge in the California Test of Personality among physically handicapped children at the three different types of school was in the extent of anti-social tendencies, one of the sub-sets of the social adjustment component. Children at special day schools expressed the greatest freedom from anti-social tendencies. However, the difference was significant only in the case of

disabled children at ordinary day schools which suggests that these children were given to more bullying, frequent quarrelling, disobedience, and destructiveness to property than were children at special day schools. Neither parental attitudes or the children's perception of their family relations were explanatory of these differences. It is possible that varying school environments may account in part for the differences. In a special school there may well be greater opportunities to taste success and to gain recognition from both their peers and the teacher. This is possible because of care given to adapting the environment to meet the individual needs of the children. A friendly, relaxed and sympathetic atmosphere was consistently found in the special schools visited in the course of this study. In an ordinary school, status and satisfaction may be denied physically handicapped children because of their inability to perform certain everyday activities. This may in turn lead to anti-social behaviour in order to attract the attention of their peers, who might otherwise ignore them completely. That there were no differences between the handicapped children at ordinary day schools and their controls suggests that the handicapped children's behaviour is merely characteristic of their normal 'anti-social' peers. On the other hand, the greater freedom from anti-social tendencies of the physically handicapped children at special day school as compared with their controls could be regarded as providing further support for the role played by the

special environment in reducing frustrations which might otherwise be expressed in anti-social behaviour.

The results from the Junior Eysenck Personality Inventory suggest that there were no differences in neuroticism and extraversion among the three groups of physically handicapped children. Of note, is the fact that the N factor showed a moderate relationship with the emotional adjustment component of the C.T.P. ($r = -0.61$, df 112, $p < .001$). It correlated, moreover, 0.49 (df 112, $p < .001$) with social adjustment, (the inverse weighting on the J.E.P.I. accounts for the negative coefficient). The J.E.P.I. extraversion factor also showed some association with adjustment. The Pearson correlation coefficients were 0.24 (df 112, $p < .05$) with emotional adjustment and 0.20 (df 112, $p < .05$) with social adjustment.

A comparison of the mean scores (J.E.P.I.) with the British norms (Eysenck, 1971) indicates that the physically handicapped children in the present sample were re presentative of British school going children. This provides further support for Kellmer Pringle's view (1964) that the handicapped are not inevitably maladjusted. There is little research documentation of the relationship between extraversion and physical disability. The present findings support those of Nagge and Sayler (1933) who studied a group of disabled high-school students from special schools.

The significant differences which were found in the three groups of physically handicapped children in relation to the Lie scale (JEPI)may raise doubts about the validity of the

self-report inventories. Neuroticism and conformity (Baker Lunn's scales) were in fact the only two behavioural dimensions with which the Lie scale correlated, the coefficients being -0.25 and 0.35 respectively. In other words, children with low scores on neuroticism and high scores on the conformity scale tended to 'lie'more. Similar relationships have been reported previously (Eysenck et al., 1971). When the variation due to the lie factor was removed by analysis of covariance, the results on the two variables did not change significantly.

It will be remembered that intelligence was also related to the lie scale, particularly verbal intelligence ($r = -.41$, df 112, $p < .001$), i.e., bright children 'lied' less. This result is again in agreement with Eysenck et al., (1971). They suggested an interpretation of the Lie scale in terms of 'lack of insight', insight being a cognitive function and consequently related to IQ.

The observed correlations support previous suggestions that the Lie scale is multi-dimensional in nature. It may, depending on instructions, circumstances, motivation and other factors measure a tendency to 'fake good', or conformity to social pressure, or insight.

The criteria to be met before 'L' can be interpreted as a desire to 'fake good' were not met in this study (Eysenck et al., 1971). In other words, testing was carried out under low drive conditions. The L scores were not unusually high, the mean scores being representative of

the British norms. Correlation of 'L' with 'N' was again not particularly high, the coefficient being of lower magnitude than that reported in the J.E.P.I. test manual (Eysenck, 1971).

These findings suggest that factors other than 'intentional faking' contributed more to the genesis of the present L scores. Owing to the strength of the correlation between the L scale and IQ, it may be argued that a psychological trait such as lack of insight was the predominant factor.

The lack of significant differences in the three groups of physically handicapped children on Baker Lunn's scales relating to social and personal adjustment, is consistent with the earlier findings. Furthermore the compatability of the children in their attitudes to school confirms the homogeneous nature of adjustment of children in ordinary and in special schools. To regard school attitudes as indicative of adjustment is based on the well-documented relationship between these two variables (Douglas, 1964). It has already been stated that a similar relationship was noted in this study: children at special day schools viewed their class ('other'image of class) in a more satisfactory manner than did those at ordinary day schools. This finding may reflect a superiority in adjustment of children at special day schools. It should be emphasized that of all the measures employed in this study children at special day schools consistently ranked first in overall adjustment followed by those at ordinary day school.

Teachers' assessments of adjustment

That there were no differences in the teachers' estimates of social adjustment in the physically handicapped children supports the findings from the children's personal assessments. It is difficult to place an interpretative value on the syndromes which most frequently characterised the different groups of the physically handicapped children as the data were not subjected to statistical analysis. Possibly the different patterns of behaviour reported may reflect the varying school environments to which the physically handicapped children were exposed. 'Hostility to adults' which characterised the physically handicapped children at ordinary day schools may well be an emotional response to frustrations of feeling or to being made to feel different from their non-handicapped peers. On the other hand, 'unforthcomingness' which was most frequently reported for the children at special day school might be a reflection of the more overproctective and non-competitive nature of the school. The anxiety or uncertainty about adult interest and affection demonstrated most often by children at special residential school may be a reaction to separation from their parents and may also reflect their need for substitute adult attachment.

The teachers' assessments of the physically handicapped children at ordinary day school compare very favourably to those of Anderson (1973a). In her investigation, 54 per cent of the disabled children were assessed

as well-adjusted compared with 57.9 per cent in the present study. Comparison of physically handicapped children at special school with McMichael's (1971) sample of disabled children at similar type of school showed the proportion of well-adjusted children in the present study to be greater. Only 44 per cent of McMichael's sample were assessed by their teachers as being stable as compared with 63 per cent of the sample in this report. The differences may be due to McMichael's more heterogeneous sample in relation to type of disability and to level of intelligence. Eleven of her sample of fifty children were mentally retarded, a factor which is known for it's relationship to adjustment.

It must be emphasised that this study showed a nonsignificant relationship between the teachers' ratings of social adjustment and the inventory responses of physically handicapped children at day and residential schools. Positive relationships were found between the present self-report inventories, and there is therefore little reason to doubt their validity. A lack of relationship between self inventories and teacher ratings has been described by many previous writers (Eysenck and Cookson, 1970; Ghodsian, 1977). Data from the Isle of Wight Study (Rutter et al., 1970a) indicated that teacher questionnaires alone cannot be regarded as valid indices of maladjustment.

One reason for the present lack of agreement among teachers at special schools may be found in their divergent views of adjustment. Another possibility is

that their assessments may be more unrealistic as a result of the absence of normal children with whom the handicapped children may be judged and compared.

School attainment

The statistically significant differences which were found in school attainment indicate that the type of school was an important determinant in this respect. Both the teachers' estimates and the objective assessments were in strong agreement and showed that children at ordinary schools were more adept at both reading and arithmetic than were those at special schools. These findings are in agreement with the observations of Kellmer Pringle and Fiddes (1970).

Factors which have led disabled children to be placed in special schools, namely poor intellectual ability and emotional disturbance, have often been attributed as reasons for their poor educational attainments. However, in view of the similarity in intelligence and emotional adjustment between the children at ordinary and those at special schools it is unlikely that these variables accounted for the present discrepancy.

It has been pointed out that classes in special schools are likely to contain a wide ability range, that special schools may be separated from the main stream of educational thinking, that standards may slip with the result that teachers may accept that the children's

handicaps are such as to prevent them from making adequate educational progress. The working day in special schools is usually shorter, thus reduces time for learning. The more handicapped the children are, the more likely they are to need time off for medical treatments. There is also the probability of lengthy and tiresom journeys to and from school. (Tizard, 1971; Kellmer Pringle and Fiddes, 1970). Any or all of these variables, may have contributed to the lower school attainment of the present sample of children in this study attending special schools.

The few statistically significant differences between physically handicapped children at ordinary and at special schools is of particular interest in view of many unsupported arguments which have been advocated in favour of the different systems of education for handicapped children which have evolved. However, it is of interest that the direction of results is similar to those reported for educable mentally-retarded children (Cave, 1971), i.e. that pupils in special classes tend to be better adjusted socially but less advanced academically when compared with those in ordinary grades. In view of the adverse comments which have been recorded about special residential schools (Haskell and Anderson, 1969), it is of particular interest that children at these schools coped socially, emotionally and educationally as well as did their handicapped peers at special day schools. The suggestion that physically handicapped children are sent to special residential

schools predominantly because of psychosocial problems in the home does not find support from the children's perceptions of their family relationships or from the teachers' estimates of the environmental home circumstances. However, should some of the adverse pointers mentioned in the literature be true of this sample then one must be inclined to agree with Gulliford (1971) who stated that "boarding education provided in the British system of special education is a great asset permitting the rehabilitation of many children who would otherwise founder". (p.9).

In addition, unsupported arguments are frequently heard concerning the psychological effect which ordinary day or boarding schools may have on children. In the present study it was found that children at boarding schools had the stronger ties to their families and were freer of nervous symptoms. The family-relationships finding is in agreement with the results from the Bene-Anthony test. It has already been stated that there was a consistent, although statistically non-significant, trend for children at boarding schools to perceive their parents in a more positive and favourable manner than did those at day schools. It was speculated that this trend resulted from reduced exposure to everyday parental pressure and family friction. However, it was also noted that children from boarding schools were of a higher socio-economic background than were those from day schools. Healthier psychological responses to children were expressed by parents of higher

socio-economic status therefore, more desirable family relationships might be expected in such groups. It is also possible that the greater freedom from nervous symptoms of the children at boarding school was related to their more 'privileged' position in society, contributing towards a greater sense of personal security.

The finding of greater anxiety in the classroom (Barker Lunn's scales) at boarding as compared with day schools appears contradictory to the result in the same group of freedom from nervous symptoms. This discrepancy cannot be explained in terms of difference in sex, social class, or ability, factors which have been found to be related to anxiety (Warburton, 1962; Berk et al., 1970). As the observed anxiety was specific to the classroom it might be argued that this relates to classroom instruction and atmosphere. On account of the selective nature of the boarding schools included in this study, high academic standards as a perogative might be expected. As a result instruction is likely to be formal and the atmosphere controlled and rigid. In such circumstances greater anxieties, fears and worries about educational achievement might be expected. On the other hand in ordinary day schools where teaching methods tend to be more child-centered, concern being more for the all-round development of the child than for specific academic success, anxieties about scholastic achievements are likely to be diminished.

Had norms been available with which to compare the levels of anxiety of the two groups of children, the

finding would have been more informative. Lindgren (1976) has drawn attention to there being an over-awareness of the difficulties caused by an over-abundance of anxiety with a resulting failure to realise that too little anxiety also creates learning problems.

The higher reading attainments found in children at boarding schools as compared with those at day schools may reflect a greater anxiety. A positive relationship between anxiety and reading ability has been noted in the literature (Haskell, 1973). However, the differences which were found in verbal intelligence and social class in children at day school and in those at boarding school may also have accounted in part for the differences in attainment. Both factors have been found to be related to reading skills. (Clark, 1970).

The discussion has thus far been restricted to the findings obtained from physically handicapped children in the different types of school and from non-handicapped children in day and in boarding schools. However, in a study which attempts to evaluate the relative merits of the various forms of education available to physically handicapped children, it is not enough to compare one type of school with another. The aim of special education is to provide handicapped children with abilities and capabilities comparable with those of the non-handicapped so that competition or co-operation between them can be achieved in adult life. An indication of how well this goal is likely to be met may be gained through a comparison of physically handicapped and normal children.

Factors affecting a child's performance

Before embarking on a comparative assessment of this nature it might be advantageous to discuss some of the factors, other than type of school, which were found to be related to the dependent variables.

The major independent variables were taken to be the child's age, sex, family size, ordinal position, social class, environmental home circumstances, intellectual ability and absences from school. In the case of the handicapped child the additional factors of potential importance were severity and visibility of handicap, major functional effect of handicap, nature of disability and the presence or absence of neurological abnormality.

The relationships which were found between age, neuroticism and the lie score in the physically handicapped children were consistent with those in other reports (Eysenck, 1971). However, the relationship between age and neuroticism was not a linear one, the ten-year olds being the most neurotic. The particular group of children were of mixed sex and this may have masked the more common linear trend; Eysenck (1971) reported an increase with age in girls but no change for boys.

The association which was noted between age and conforming behaviour in the controls was in agreement with Barker Lunn (1970). The finding that the younger children tended to like school more and had higher arithmetical attainments may be related to their more conforming behaviour.

It is, of course, possible that the group work, activity and discovery methods, and project and assignment techniques, which are more characteristic of younger grades, may have benefited the younger child educationally and made school more enjoyable.

It was observed that physically-handicapped girls, particularly those at ordinary day schools, were better adjusted socially than were physically handicapped boys. This is in agreement with the findings of Anderson (1973a), although these were not statistically significant, and Richardson et al., (1964). It lends support to the view that a physical handicap does not have the same consequences for boys and for girls. Richardson et al. (1964) believe that handicapped girls may turn to non-physical recreation, where they are not disadvantaged. The alternatives available are perhaps less acceptable to boys because among them physical activity is more highly valued. For this reason they may experience greater difficulty in interpersonal relationships.

Differences in attitudes to school which favoured girls at special day schools could be attributed in part to their more conforming behaviour. A relationship between these two variables has been noted in the literature (Barker Lunn, 1970).

The interaction effects between sex and type of school relating to anxiety in the classroom and to reading ability are of interest in that they suggest that the type

of school available to a disabled child may have different consequences for boys and for girls. The greater anxiety among boys in ordinary day schools may reflect their greater concern over functional impairment (Richardson, 1968), this may be highlighted in an ordinary school where the social structure is likely to be more dependent of competition than co-operation.

The fact that boys at special residential schools were more adept at reading but were no more anxious than were the girls supports Clark's (1970) warning against a too ready acceptance of apparent explanation of differences in level of attainments.

The greatest source of variance in the reading attainment scores of children in ordinary day and in special residential schools may be found in the verbal intelligence scores. In both types of school boys scored more highly than the girls. The strong relationship between reading ability and verbal intelligence ($r = 0.71$) confirms Clark's (1970) finding that backward readers scored lower on the verbal scale items and were nearer to average on the performance aspects.

It is possible that the observed intellectual differences which were found among the control boys and girls also accounted at least in part for the difference between sexes in reading and arithmetic.

The other differences between sexes found among the control children are similar to those reported by other

workers. For example, boys were better adjusted emotionally than were girls (Rutter and Graham, 1970). Barker Lunn (1970) noted that boys were more able to get on with their classmates than were girls. However, girls were found to express more positive attitudes to school, to place greater importance on doing well, and to be more interested in their work.

The interaction effect observed between sex, type of school, and academic self-image among the controls is difficult to explain. Barker Lunn (1970) found that self-image in terms of school work depended to a large extent on the teachers' attitudes. The majority of the day schools in this study were co-educational while the boarding schools tended to be single-sex. Dale (1970) reported that co-educated women recorded their teachers as being more friendly, helpful, and with a somewhat greater influence for good and rather less 'influence for bad' than did women who were educated in girls' schools. It might be argued, therefore, that similar teacher attitudes were present in this study and accounted for the higher academic self-image among the girls at day schools. The significant relationships which were found among control children between school attainment (arithmetic) and family size, ordinal position and overall adjustment lends support to much of the research on this topic (Clausen, 1966). It is clear from the available literature that these relationships reflect a complex network of interacting influences, i.e., social class, intelligence and child-rearing practices.

Further research is necessary on the various interacting components of family size and position in family to disentangle the effects.

The associations which were noted among the controls between social class and adjustment, and in particular, social adjustment, confirms the work of others (Gregory, 1969). The greater emphasis which was placed on the importance of doing well by control children of high socio-economic background was not unexpected in view of the fact that achievement motivation has generally been found to be correlated with social class (Douglas, 1964).

It is of interest that similar relationships were not found among physically handicapped children. Perhaps there is a lack of class differences in the attitude to the care and management of a physically handicapped child. Support for this interpretation may be found in Dow (1965). He noted that there was no consistent class difference either in reaction to disability or in emphasis attached to physical prowess.

The significant relationships noted between social class and school attainment for all children in this study is in agreement with previous findings (e.g. Kellmer Pringle et al., 1966). It is now widely accepted that schools as they exist to-day are geared to satisfy the needs and hopes of middle-class parents. As a consequence, children of such background are more likely to be more successful in meeting teachers' expectations than are

their peers of lower socio-economic level. (Wiseman, 1970). Problems experienced by lower class children in school are aggravated by the tendency of their parents to be uninterested in educational goals or even to express negative attitudes about school.

It is generally accepted that the home environment plays a vital role in the development of a child's potential, be this intellectual, emotional, or social. Therefore, it was not unexpected to find that certain aspects of adjustment, attitudes to school, and school attainment were positively related to environmental home circumstances among the groups of handicapped and non-handicapped children in this study.

Measured intelligence is believed to be greatly influenced by the environment. Some might argue that the findings reported here would suggest that this influence starts early in life, i.e. intelligence showed consistent relationships with the demographic details of the sample and of the dependent variables. However, it is impossible to isolate the hereditary factors.

Douglas and Ross (1965) have discussed in detail the effects of absence from school on performance at primary level. The observed relationships reported in this work between school absence and attainments in reading and arithmetic agree with Douglas and Ross that school absence can be harmful. The effects found were not marked, due possibly to social class and the types of absence not

being taken into account. Again, Douglas and Ross (1965) found that the amount of absence from school had little influence on upper middle class children, whereas at all other levels considerable effects were recorded. In addition frequent daily absences were more harmful than an occasional long one.

The relationships which have been considered in this thesis between various independent and dependent variables suggest that psychosocial forces exert similar effects on the psychological development of both handicapped and non-handicapped children in the different schools attended.

Factors related to the handicap

Severity of disability

It was stated earlier that conclusive evidence has not yet been found of a relationship between severity of handicap and adjustment (Wright, 1960). The results of the present study also point to a lack of relationship between these two variables. There was a tendency for children with mild handicaps to have a higher academic self-image and to show greater interest in school work than was the case in those with moderate or severe disabilities. A possible explanation may be the ability of children with mild disabilities to participate and succeed more easily in activities which form part of the school

curriculum and leisure time.

Visibility of handicap

The lack of significant relationships between visibility of handicap and personality and adjustment measures supports the findings of Rutter et al. (1970b). The significant but low positive correlation (r = .19, df 112) which was observed between the degree of 'visibility' of handicap and the 'importance of doing well', may be a reflection of some compensatory feelings. For example, Segal (1971) inferred from his findings on attainment that visibly handicapped pupils with restricted hands or legs possibly strived harder than others.

In light of earlier findings (Wright, 1960; Anderson, 1973a) lack of association between the major functional effect of handicap and the type of disability was not unexpected.

Neurological involvement

Previous studies have emphasised the role played by the presence or absence of a neurological handicap on the psychological development of a disabled child. Rutter et al. (1970b) found the incidence of emotional and behavioural problems in children with brain disorder to be twice as high as in those whose chronic physical handicaps did not involve the brain. Anderson's findings (1973a) were not so clear cut as Rutter's. The discrepancies which she found in emotional stability and social adjustment were not statistically significant. However, when she derived a composite score from her ten measures of social competence and social adjustment, it was noted

that neurologically normal children were overall better socially adjusted ($p < .001$).

It is possible that the present results reported here and indeed those of Anderson (1973a) failed to yield such sharp distinctions between children with and without neurological handicaps because of differences in the composition of the samples. Rutter et al. (1970b) concentrated primarily on a group of children with relatively well-defined neurological disorders, i.e. overt epilepsy and cerebral palsy. On the other hand, this study and that of Anderson (1973a) had a more heterogeneous group of children among whom were some with spina bifida and hydrocephalus. It was mentioned in the review of the literature that little is yet known of the behavioural and emotional problems of children with spina bifida and hydrocephalus. It is possible that the organic brain dysfunction in children with spina bifida and hydrocephalus does not contribute to the pathogenosis of psychiatric disorder to the same extent as a brain disturbance associated with cerebral palsy or overt epilepsy.

The effect which the presence or absence of neurological handicap had on reading attainment was consistent with Anderson's (1973a) findings. In other words, when the scores were adjusted for intelligence the neurologically handicapped children were reading at a level commensurate with their neurologically normal peers.

The greater anxiety in the classroom which was expressed by the neurologically abnormal children may reflect stress and strain experienced in trying to keep

up with their peers. It might also result from the teachers failing to understand that the slowness shown at reading might be partly due to the direct effects of brain dysfunction (Rutter et al., 1970b).

The fact that arithmetical skills were not affected by the presence or absence of neurological abnormalities is unexpected in view of findings of Tew and Laurence (1975). They claim that arithmetic was the weakest school subject in neurologically handicapped children who had spina bifida. However, these children were seven years old and it is possible that the poor performance recorded at that age was not due to any qualitative differences in basic competence but might have reflected slowness in attaining the basic skills. The slowness may also have been due to more frequent absences from school. Schonell and Schonell (1957) list school absence, whether intermittent or prolonged, as one of the most important causes of lack of arithmetical skills. They stress that arithmetic is more susceptible to the influence of absences than is any other subject. Although a child who has mastered the mechanics of reading can practise at home, he can not do this with arithmetic. In this subject steps are numerous and systematic and regular practice with graded examples is important to automatize past steps and to consolidate new ones.

Physically handicapped children at ordinary day schools and their controls.

The findings reported here support claims made by Bowley (1967a), Marlow et al. (1968), and Anderson (1973a) that the physically handicapped in ordinary day schools are able to cope as satisfactority as their normal peers in their social and emotional lives as well as in educational achievements. At least this is true when the children's own assessments and the objective assessments of educational attainments are considered. However, the teachers' assessments of social adjustment suggested that physically handicapped children at ordinary day schools had greater difficulties than had their normal classmates. It is, of interest that this discrepancy was only to be found in the boys - an observation which is not based on a statistical analysis between the two groups of boys and girls. However, examination of the mean scores and the standard deviations does suggest a statistical significant difference in the boys but not in the girls. The mean scores for the OD and ODC boys were 13.00 and 3.24 respectively whereas for the girls these were 5.9 and 5.8. The symptom most frequently reported for the boys was 'hostility to adults'. This emotional behaviour is probably a manifestation of the humiliation and despair experienced in an environment where much emphasis is placed on competitive team games and athletic pursuits. As girls are less inclined towards such activities they possibly suffer less frustration.

It was mentioned earlier that a positive correlation of moderate magnitude was found between the teachers' and the pupils' estimates of social adjustment. Yet the children's self-inventories did not yield statistically significant sex differences. This may have been due to the measure (C.T.P.) extending to out-of-school situations, while the teachers' Guides (BSAG), were confined to a school situation. The differences which were observed in the two measures may imply that boys find greater difficulty in adjusting to school than to other situations. This is possibly due to a greater frequency of frustration crises in school.

Social relationships

Examination of the 'social relationships' of children in ordinary day schools indicated that physically handicapped children were not so well accepted by their peers as were their normal controls. This lends support to the findings of Force (1956), Centers & Centers (1963), Billings (1963), and Anderson (1973a).

It was mentioned in the review of literature that children with cerebral palsy were rejected by their peers to greater extent than were children with other types of disability (Force, 1956; Anderson, 1973a). The results presented here did not support this trend possibly due to the greater homogeneity of disabilities in this study, i.e. all the physically handicapped children had visible disabilities. Both Force (1956) and Anderson (1973a) based their conclusions on a comparison of children with cerebral palsy and a mixed group of children with either a non-visible

or a visible physical handicap. Had Anderson, for example, compared the social acceptability of children with cerebral palsy and those of spina bifida, it is doubtful, from the results set out on Table 4.3, p.106 of her book, whether statistical differences would have occurred.

The present results were consistent with Anderson's in that the social acceptability of a physically handicapped child in an ordinary school was not related to the severity or degree of visibility of his handicap, to a lack of hand control, or to mobility. Furthermore, the tendency for children with neurological abnormalities to be less well accepted by their normal classmates than were the neurologically normal lends further support to Anderson's finding. However, it is not clear from her text whether the differences expressed were statistically significant.

It is of interest that the direction of results as to sex difference and social acceptability favoured the boys. This difference, although contrary to that found by Anderson, confirms the children's own assessments in terms of 'getting on well with classmates' (Barker Lunn's scale).

Evans (1966) reviewing studies of popularity and isolation, mentioned that intelligence, attainment and adjustment are important concomitants of social acceptability by the peer group. Although this was the case in control children in this study the only characteristics

which were positively related to social acceptability of the physically handicapped were certain components of emotional adjustment, (i.e. sense of personal worth, sense of personal freedom and a feeling of belonging), extraversion, and the teachers' estimates of their mathematical ability. Thus a physically handicapped child who feels personally secure, is extraverted, and is considered by his teacher to be good at mathematics is likely to be more readily accepted by his normal classmates.

The few relationships found among physically handicapped children as compared with normal children suggest that physical disability is such a powerful cue in establishing children's preferences that it masks those which are based on the better known concomitants of social acceptability.

The role played by extraversion is an interesting one. According to Evans (1966) extraversion and popularity are positively related in normal children. It seems to the author that extraversion in a physically handicapped child may be particularly important in counter-balancing the negative attitudes to physical disability.

First of all, the outgoing, lively, and carefree behaviour so typical of extraverted children is likely to make communication easier. The capacity to communicate with others has been found to be an important factor in the sociometric status of normal children (Evans, 1966). It is also possible that extraverted behaviour in a disabled child may create an impression of a light-hearted approach

to his disability. This may relieve normal children, making it easier and less embarassing for them to interact and to come to terms with the disability. There is also the possibility that the liveliness and responsiveness which is often reflected on the face of an extraverted child may make a physically handicapped child, particularly a child with cerebral palsy, appear more attractive facially. Dion and Berscheid (1974) have demonstrated the importance of physical attractiveness on social interaction. This lends further support to the studies of Richardson et al. (1961) which stressed the primary importance of the face in an initial assessment of another person.

The greater social acceptability of physically handicapped children who were assessed by the teachers as being good at mathematics suggests that the favourable comments on their accomplishments may have gained them some prestige. On the other hand, there is evidence to suggest that attitudes of teachers in some cases may lead to rejection and isolation (Evans, 1966).

The slight relationship found between the teachers' ratings and the children's estimates of the popularity of disabled children lends support to studies which have indicated that teachers often do not know their pupils as well as they think they do (Lindgren, 1976). However, as there was reasonable agreement among the ratings relating to control children, it is possible that a physically handicapped child poses special problems for

teachers. The tendency which was noted in this study for a teacher to overrate the peer acceptance of physically handicapped children, indicates that teachers may be unaware of the extent to which a physical handicap can mask qualities which might otherwise operate as antecedents of popularity. It might also be a reflection of the teachers' inhibition of their own negative feelings to disability (Jones and Sigall, 1971).

In view of the findings presented here the apprehension which has been expressed on the ability of physically handicapped children to cope with ordinary schools should be dispelled. On the other hand, any reassurance which may be gained ought not give rise to complacency. School personnel must continually be alert and sensitive to those children who are potentially at risk. For example, in this study, it was seen that physically handicapped children were not so readily accepted by their normal classmates and that boys were more unsettled in school than were girls. Aspects such as these which may impede a disabled child in achieving his full potential require special attention. For example, careful manipulation of the school environment may be needed and mention of methods in which this might be achieved will be discussed later.

Physically handicapped children at special day schools and their controls.

The view that the social and emotional adjustment of physically handicapped children is fostered by the

sympathetic atmosphere of special schools is confirmed by the results of this work. The findings revealed that disabled children in special day schools, despite rather severe handicaps, were as well adjusted socially and emotionally as were their normal peers in ordinary day schools.

The differences which were observed in the lie scale (J.E.P.I.) question the validity of the children's self reports. It was suggested earlier that the discrepancies observed among the groups were possibly due to lack of insight rather than to intentional faking. More important than possible interpretations of the 'lie' factor is that the results did not change when the effects of Lie factor were removed by analysis of covariance.

The finding that disabled children felt more free from anti-social tendencies than did the normal controls may reflect differences in school environment. The special schools because of a more child-centred approach may cause less frustration. On the other hand, the more restrictive environment of the special school may make opportunity for anti-social acts much rarer. It is probably a combination of restrictiveness and concern that accounts for these findings. The more positive attitude which physically handicapped children showed to school class may further reflect the more sympathetic and accepting atmosphere of special schools (Smith, 1966).

The results in attainment in reading and arithmetic showed that physically handicapped children at special day school were scholastically poorer than were normal children in an ordinary primary school. The observation that the difference between the two groups of children remained statistically significant after the effects of IQ were partialled out, indicates that physically handicapped children did not progress as well as might be expected on the basis of their IQ level.

It has been stated that degree of disability was not related to attainment so it is unlikely that this represented a significant proportion of the variation. However, school absence might well have been a determinant of a child's poor performance. Striking differences were found in the amount of absence from school between the two groups. In their Isle of Wight study, Yule and Rutter (1970) in the physically handicapped noted a relationship between reading retardation and school absence. They suggested that frequent short absences might have "led to discouragement and lowering of morale and confidence with consequent effects on the children's attitudes to work and thereby to their achievement", (p.307). As already stated there are many references to a strong association between school absence and arithmetical ability. Acceptance of a multivariate approach to attainment suggests that other contributory factors might also have been present. It has been mentioned earlier in this thesis and in the literature

(Tizard, 1971; Kellmer Pringle and Fiddes, 1970) that special schools may become divorced from the main stream of educational thinking; standards may slip; teachers may accept too easily that the handicaps are such as to prevent children from making adequate educational progress; school days may be shorter thus reducing time for learning; and travelling time between home and school may be lengthy thus causing tiredness. Any or all of these unfavourable characteristics may have prevented physically handicapped children at special day schools from achieving their full potential.

In the literature, confidence has generally been expressed on the ability of physically handicapped children in special day schools to achieve good social and emotional adjustment. Yet the critics of separate education are of the opinion that special schools do not fully prepare a physically handicapped child to take his place in society later. These two opinions appear contradictory as the successful integration of an individual in the life and work of his community depends ultimately on his social and emotional adjustment (Kellmer Pringle and Fiddes, 1970). It is usual to regard good adjustment as an indicant of academic progress (Arkoff, 1968). As previously stated, adjustment was unrelated to attainment in the present sample of disabled children at special day schools. In addition, the scholastic achievements of these physically handicapped children were considerably poorer than were those of normal children in ordinary day schools. If this situation were to persist until a child reached school leaving age, there

would seem justification for believing that a special day school may fail to prepare it's pupils for the world outside.

The nonsignificant relationship between attainment and adjustment which was noted in the present sample of disabled children at special day schools, implies that these schools placed little emphasis on educational attainment. In other words, educational success becomes irrelevant as a basis for self-evaluation. It may be that criteria other than educational achievement are employed in an assessment of one's worth, so that a child can find an alternative source of positive self-evaluation. Or indeed, the school may place importance on scholastic achievement but because of it's more child-centered approach to education, rewards may be provided for relative effort, which should help to eliminate a sense of failure.

There are great dangers in these approaches. Firstly, the physically handicapped child may not achieve his maximum potential if his capabilities have not been accurately assessed and the full implications of the findings made known to the teacher. Secondly, a false sense of security may be instilled, i.e. a physically handicapped child may develop an unrealistic impression of his abilities if he is not given a realistic appraisal of his attainment level.

It is appreciated that the parents of a disabled child may take a similar stand to the teachers in the special

school and as a consequence will also contribute to the poor relationship between attainment and adjustment.

It is when first seeking employment that the physically handicapped person is likely to be introduced to the moment of truth. It is, of course, possible that the school leaver may not appreciate the situation, believing that he is discriminated against on account of his disability. An interpretation such as this is likely if the heightened importance of physique during adolescence is considered (Wright, 1960).

Rickard et al. (1963) drew attention to the fact that competent disabled individuals were often preferred as potential employees to less competent applicants who had no disability. Thus the many problems which arise for those leaving special day schools (Tuckey, 1973; Morgan, 1974) may be remedied by raising the educational standards in these establishments.

It must be emphasised, however, that "any attempt to raise the level of educational functioning for a proportion of the children needs to be carefully considered and if decided upon, carried out with care and constant vigilance. Providing more challenging, enriched or remedial teaching would have to be suitably adapted to the needs of each individual pupil; this is different from intensive coaching, both in method and in expectation since quick and short-term results are neither sought for nor expected. Rather the emphasis needs to be on the

therapeutic value of success, the fact that improved educational achievement can be a source of emotional and intellectual satisfaction" (Kellmer Pringle and Fiddes, 1970, p.73).

Greater concentration of efforts on securing the full educational potential of individual physically handicapped children at special day schools is not to deny the need for a comprehensive after-care service (Tuckey, 1973).

Physically handicapped children at special residential schools and their controls.

The lack of statistically significant differences which was found between the two groups of children on the various personality, attitudinal and adjustment measures indicate that physically handicapped children at special residential schools were as well adjusted, socially and emotionally, as were normal children at ordinary boarding schools.

Many inter-related processes may have accounted for the higher social standards and closer family relationships observed among normal children at boarding schools. It will be recalled that these children came from higher socio-economic backgrounds. It was noted that throughout the whole sample the most healthy psychological responses were found among parents of high socio-economic status. It is appreciated that the attitudes of parents of normal

children at boarding schools were not examined but these are unlikely to be different from those of the parents of high socio-economic standing in the sample. Indirect evidence from the Family Relations test supports this view.

If control children were, as hypothesised, exposed to more healthy psychological treatment from their parents than were physically handicapped children at special residential schools, higher social standards and closer family relations might be expected from them.

The greater sense of personal freedom which was noted among the control children may reflect less restricted school and home environments. The author's personal observations were that physically handicapped children had less to say in planning their leisure time and social activities than had normal children at boarding school. For example, therapeutic activities such as swimming and the wearing of physical appliances or protheses had to follow scheduled times. Further constraints may be imposed on physically handicapped children at home during their holidays. For example, they may be prevented from expressing their own individuality by over-conscientious and over-protective parents (Hewett, 1970). On the other hand, some parents may be careless and neglectful of children's physical appliances and protheses, so that these are not worn. This was a regular complaint of the staffs at special residential schools. Children's mobility may be

restricted and as a consequence their sense of personal freedom affected. There is also the possibility that feelings of social restriction may be created if physically handicapped children have difficulty in establishing friendships with local children when at home (Younghusband et al, 1970).

The greater tendency which was found among disabled children at special residential schools to 'lie' casts some doubt over the findings. Reassurance should be possible as statistical changes did not occur in the results when the Lie scale was taken into account. However, there is evidence to suggest that the discrepancy in conforming behaviour which favoured the physically handicapped children was a product of differences in the 'Lie' scores. A relationship between the 'Lie' scale and conformity has been noted previously (Eysenck et al., 1971). The present finding does not, however, allow conclusions to be drawn about causality. There is also the possibility that the association is a product of some common underlying factor

Similarity in school attainments which was observed between disabled children at special residential schools and their controls when verbal ability was taken into account, suggests that the physically handicapped at special residential schools progressed as well as might be expected on the basis of verbal IQ. However, the results were less encouraging when non-verbal intelligence was taken into account, i.e. physically handicapped children

did not achieve the maximum attainment of which they were capable. It is of interest that a comparison of verbal and non-verbal intelligence of children st special residential schools revealed the verbal ability to be depressed. The mean verbal and non-verbal IQ scores were 96.87 and 104.00 respectively ($t = 3.49$, df 36, $p < .01$).

Frequent mention has been made in the past of poor verbal skills among children in residential care, e.g. Dinnage and Kellmer Pringle (1967). It is possible that the lack of adult contact previously mentioned in the literature may have been a contributory factor in the present sample. In one of the residential schools visited there were few adults with whom the physically handicapped children could talk or interact with after school hours. In another school auxiliary staff were available during leisure hours. However, it is possible that children did not benefit fully from this as the staff was composed partly of foreigners in which there was a high turnover. It has been stated earlier that the poor scholastic attainments found in the present sample of physically handicapped children at special day schools were attributed in part to school absence. A striking difference in absenteeism was also found between the present group of disabled children at special residential schools and their controls. Thus absence may also have accounted in part for the present underachievement of physically handicapped children at special residential schools. Moreover, there is the possibility that repeated absences from school, involving for

example, hospitalisation, may have been a factor in depressing the verbal ability of these children.

The lack of statistical differences in the social, emotional and attitudinal development of severely-disabled children at special residential schools and of normal children at ordinary boarding schools may be regarded as a tribute to the important role played by the staff of special residential schools.

However, as with the similar encouraging results from the special day schools, a complaisant attitude must be avoided. Attention has been drawn to the considerable variation in the quality of residential care throughout the British Isles (King, Raynes, and Tizard, 1971). It is possible that the Scottish schools which participated in this study were outstanding in meeting the individual needs of physically handicapped children. It is also possible that fewer adverse home circumstances were evident to counteract the positive efforts of the schools. Poor environmental home backgrounds in children at special residential schools is not uncommon (Haskell and Anderson, 1969).

Detailed information has been given on ways in which a child in a special residential school can be educated to achieve maximum independence and thus to acquire the experience necessary for a full and satisfactory life (Gaskell, 1973; Garrett 1973; Peddar, 1975). However, the important role which scholastic achievement may have requires

to be more strongly emphasised. The proposal which was made earlier in relation to special day schools should be re-emphasised. Considerable effort must be made to ensure that physically handicapped children achieve the maximum attainment of which they are capable. To reach this goal it is necessary that each child be carefully assessed. Goals must then be set which will provide a challenge and can be attained with real effort.

CHAPTER 14

CONCLUSIONS AND RECOMMENDATIONS

The present study has been exploratory. The value of it's findings lies in the provision of practical suggestions rather than in determining methods by which the aims of education for physically handicapped children may best be attained. It is hoped therefore, that the information provided, when interpreted in the context of earlier research and experience, may (i) aid decisions about the placement and management of physically handicapped children in schools; (ii) suggest improvements to the main educational facilities for such children; and (iii) assist in the planning of future services for them.

Significant and conclusive rather than non-significant and inconclusive findings are easier and perhaps more exciting to report. The findings in this study are with few exceptions statistically nonsignificant. Yet nonsignificant findings are in many instances as important to the understanding of a subject as are significant ones.

It is possible that many differences might have been obscured by a poor experimental design. Reference was made in the introduction to the fact that adjustment not only depends on the personal characteristics of the

individual but also on the characteristics of the situation. Yet in this study no attempt was made to measure the unique characteristics of the different schools. It is possible that the results may be complicated by variations in school organization, classroom atmosphere and teacher attitudes.

It has also been pointed out that the sample of physically handicapped children was not truly random. In it's favour, however, is the fact that the majority of the sample (78%) represented the total Edinburgh population of children aged from 9 to 11 years inclusive who had visible physical handicaps affecting movement.

On the basis of the validity checks reported by previous researchers, it is reasonable to assume that the tests employed in this study measured the variables for which they were designed. Mention was made earlier of the desirability of including only standardised British self-report inventories. This could not be done owing to the unavailability of suitable tests. The California Test of Personality which was chosen to measure social and emotional adjustment showed a good relationship with the Junior Eysenck Personality Inventory. Thus greater confidence in it's validity with British children is now possible.

A further cause of concern might result from the reliance placed on children's self-reports. However care

was taken to minimize the likelihood of distortion by including the basic procedures suggested by Hoffman and Lippitt (1960).

Increased confidence can be placed in the results if consideration is paid to the consistency of the findings. Moreover, the Lie scale which was incorporated to detect the tendency to deceive, yielded mean scores which were compatible with the British norms. In addition, there were no statistically significant changes in any of the dependent variables when the confounding effects of 'faking good' were controlled.

It is recognised that these results might have yielded more valuable information had the study been supplemented by clinical observations. Rutter et al., (1970) demonstrated the value of this in their Isle of Wight study, e.g. teachers' and parents' questionnaires on children's behaviour were supplemented with psychiatric interviews with the children.

From the present study it became apparent that parents' attitudes and children's perception of their family relationships should be considered in conjunction with parent and sibling data. This approach would facilitate assessment of the family variables which influence development.

Although confidence can be placed in the present results, the conclusions to be drawn from them may have restricted application. The study was limited to children aged from 9-11 years of age inclusive. Thus the

conclusions to be reached may not be applicable to physically handicapped children of all ages. It was argued earlier that adjustment is not static. Susan Isaacs (1967) pointed out that children from seven or eight to eleven or twelve years of age have far fewer neurotic symptoms and emotional difficulties. "At this time the child enters upon the most stable and well-organised period of his emotional life, a stability largely lost with adolescence and not regained until full maturity" (p.27). It is possible, therefore, that integration or segregation exerts either greater or different influences on the social, emotional and educational adjustment of the older physically handicapped child. For example, there was evidence to suggest that the physically handicapped at special day schools were little affected psychologically by poor school attainments. However, it is possible that children as they grow older may develop a greater dependence on good scholastic performance. Thus their growing awareness of poor attainment may take on new dimensions. There is also the possibility that whereas young disabled children may benefit from the alleged sheltered environment of special schools, older children might not. It is also possible that repeated exposure to poor peer acceptance such as was found in the present group of physically handicapped children in ordinary day schools, may exert a greater effect during adolescence.

Clearly there is a need for longitudinal studies to help to clarify the influence of integration or segregation on different phases of human development and also to trace their long-term effects.

It must also be remembered that the degree of disability in physically handicapped children at ordinary schools was relatively mild. The conclusion to be drawn might have been different if the disabilities had been more severe. Although Anderson (1973a) from a study of case histories points out that the degree of handicap is relatively unimportant to successful integration, more empirical information is needed on the interaction of degree of disability and integration in ordinary schools.

Areas for further research

There were several findings unique to this study which merit further investigation: firstly, the disparity of results between these findings and earlier research on the social and emotional adjustment of neurologically handicapped children, suggests a need to study the role played by brain damage in the psychological development of children with different physical disabilities. Insights which research of this nature may provide should facilitate the development of curricula and methods to remedy the educational and psychological disabilities of those most at risk. Rutter et al., (1970b) have, however, stressed

the need "to move from general categories of brain damage to the more detailed study and delineation of specific forms of brain dysfunction and disorder" (p.211).

Secondly, the phenomena of social rejection of physically handicapped children in ordinary schools requires detailed study. More must be known about the factors which determine social rejection of the disabled. For example, the association between social rejection, sex, type of disability, and personality characteristics is far from clear. There is also uncertainty about the part played by social rejection in the psychological development of the handicapped child. Development of methods to combat or remedy social rejection would also be of value.

Thirdly, the distinct effects which the ordinary school environment appeared to have on the boys and girls in this study may raise questions as to acceptability of integration for all children. Further systematic research on this issue is necessary.

Fourthly, it was argued that the poor sense of freedom enjoyed by the present group of disabled children in special boarding schools might reflect a controlled and inflexible environment in both the school and in the home during holidays. A study of their leisure and social activities might be revealing.

Finally, the association noted in this study between school absences and poor school performance suggests that more attention should be paid to this issue. As

physically handicapped children are prone to absenteeism, this is an area of research which might benefit them in particular. In view of the findings of Douglas and Ross (1965) particular care should be paid to distinguishing between intermittent and prolonged absence from school.

Conclusions

The conclusions which may be drawn from the results expressed in this thesis are that neither integration nor segregation is superior in ensuring the optimal psychological development of physically handicapped children. On the other hand, at the present time and bearing in mind the limitations of the study, ordinary day schools seem to be more successful in promoting the higher level of scholastic achievement.

Reference was made earlier to the fact that the purpose of education is to provide the individual with the opportunity to reach his full potential and to become a contributing member of society. It would seem that the present conclusions imply that physically handicapped individuals would achieve this goal more easily if they were educated in ordinary schools. This is the trend in other countries, e.g. in particular in Scandinavia, and also in parts of the U.S.A. and of Canada. The reasons for the comparatively slow development of integration in the British Isles are numerous. Often quoted are inaccessibility of ordinary school buildings, shortage of resources

and of supporting services and auxiliary staff and the attitudes of those concerned. However, in view of the marked expansion in the resources devoted to special schools (Education: A Framework for Expansion, HMSO, 1972), the Working Party on the 'Integration of the Disabled' (Snowdon Report, 1976) believe that these reasons are beginning to look much more like rationalisations and excuses. It is possible that the present lack of commitment to integration may reflect a lack of systematic study of the efficacy of integration or segregation. Although the 'Snowdon' working party does not believe this to be the case, further empirical data favourable to the cause of integration should both help to strengthen the position of its supporters and to limit the tendency of Governments to procrastinate.

Since the commencement of this work much has been written about handicapped children and the ways in which their needs can best be met. (Gulliford, 1971; Anderson, 1973a; Palmer, 1973; Dibner and Dibner, 1973; Boswell and Wingrove, 1974; Loring and Burn, 1975; Gearhart and Weishahn 1976; The Snowdon Report, 1976). It is recognised, therefore, that few new recommendations can be made. However, the results of this study suggest that particular attention must be paid to certain aspects of the education of physically handicapped children in ordinary schools.

Firstly, increased integration would necessitate the provision of special facilities to cater for a wider

range of the more severely handicapped in ordinary schools. For example, modifications to school buildings, lifts, furniture, and the provision of special educational equipment would have to be instituted. Special transport would also be necessary for some children. Facilities such as these are now available in Scandinavia. Indeed it is prescribed, although not enforced, that in Scandinavia designs and constructions of public buildings must take the disabled into account (Dahl, 1971).

As in Scandinavia, qualified personnel would be required to help physically handicapped children in the bathroom and lavatory, feeding, dressing, moving around school, taking part in recreational activities and whenever necessary in administering medication. In addition greater provision would have to be made for therapy. In view of the relationship noted in this study between absenteeism and poor academic progress, attention should be given to providing peripatetic therapists who would work with the children in school or preferably at home after school hours. Even more desirable is the employment of therapists on the school premises. In this way practical advice could be given to the teachers.

Integration of children who are dependent on special residential schools because of adverse home circumstances would necessitate the development of hostels, properly planned, staffed and equipped. The present special

residential schools could be easily converted to fulfil this need.

To date there is little factual information on the integration of very severely handicapped children and therefore the changes outlined above should first of all be undertaken in several carefully chosen pilot schools.

Secondly, attention would have to be paid to careful observation and assessment of disabled children. Special centres should be set up for this purpose. It has been suggested that special day schools could satisfy this requirement (Anderson, 1973a). Useful information and advice could as a consequence be disseminated to parents, teachers and the normal peer group.

It has been suggested that most parents of physically handicapped children favour ordinary schools. (Tizard, 1971). Nonetheless there are some who would need reassurance (Woodburn, 1975). The Snowdon report provides suggestions on ways in which parents can best be prepared for integration.

In recent years, there has been increased emphasis on individual instruction for all children. To reinforce this approach teachers should, for example, be informed about the children's intellectual potential, the attainment level, success of past and present placement and specific difficulties which might arise.

The poor awareness of the teachers in this study on the extent of social isolation of physically handicapped

children at ordinary day schools, indicates that instruction in the subject of handicap would be of benefit. Such training would be incorporated in the curriculum of teacher training colleges. The Snowdon report makes the point that booster courses and one-day conferences on handicap should be a regular occurrence. As a consequence, psychological and educational disabilities should become easier to prevent or remedy.

The Scandinavian countries have organized therapists and specialist teachers to provide an advisory service for teachers in ordinary schools, and such a service might be organised in Britain.

Finally attention must be paid to the ordinary normal children in the schools. The present findings indicate that they should 'learn' to accept more readily their handicapped peers. In Scandinavia social rejection of physically handicapped children is prevented or alleviated by use of talks or films, which prepare normal children to accept the disabled. Favourable results have also been achieved by demonstration of the special equipment which is needed by the physically handicapped child and with explanations of how this helps him. An alternative approach, also used in Norway (Dahl, 1975) has been to make normal children responsible for the daily welfare of the physically handicapped child in school, e.g., helping the child to move from room to room and seeing that he is not isolated during break-time.

The mass media could also be used to combat negative attitudes to disability. Norwegian television has, in fact, plans at the present time to promote a greater understanding and acceptance of disability among the public (N-R-K., 1975).

The fact that the disabled child's social isolation might be a function more of his behaviour than of negative attitudes to disability must not be overlooked. In such cases the social skills of the child should be improved. Programmes similar to those used in the Littlemore Hospital, Oxford, (Argyle, 1974) might be developed.

Greater concentration on the recreational activities of disabled children in ordinary schools might also prove valuable. The results of this study showed that satisfying participation in selected sports and other suitable activities might aid physically handicapped children and in particular the boys, in the attainment of better social adjustment. In other words in school they would become participants rather than spectators. This participation should facilitate the development of ordinary feelings which might in turn give rise to greater poise and ease in the presence of other people.

It is recognised that the model of future educational provision for disabled children should not exclude special schools. Gulliford (1971) has commented on the fallibility of the either/or argument to special education; instead a full range or continuum of services

must be offered and each child must be considered individually.

The present results viewed in the context of Tuckey's (1973) data indicate that special schools must in future pay particular attention to ensuring that physically handicapped children reach the maximum attainment of which they are capable. In addition, serious consideration must be paid to the very comprehensive recommendations referred to earlier on methods in which the needs of physically handicapped children at special residential schools can best be met (Gaskell, 1973; Garrett, 1973; Peddar, 1975).

It is realized that to implement the recommendations outlined above would require the expenditure of large sums of money. In terms of cost, it would probably be more attractive to improve the curriculum, working conditions and other aspects of the environment of special schools rather than to expand the ordinary school system.

However, there should be consideration of the fact that in a rapidly shrinking world people are forced more and more into contact with one another in every activity of life, i.e. in employment, and in housing and leisure. Schools which are microcosms of society should seek to prepare and fit the individual for this society. Thus, although possibly more costly, an obvious advantage of educating the handicapped child in an ordinary school is that the normal community, i.e. non-handicapped children,

teachers and parents, would be given the opportunity of attaining an awareness and acceptance of disability.

"In Nature, there's no blemish but the mind;
None can be called deformed, but the unkind."

Shakespeare (1601).

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APPENDICES

APPENDIX A

Interpretation of 'Grades' on Raven's Progressive Matrices Vocabulary Tests.

Grade I or *"intellectually superior"*, if his score lies at or above the 95th percentile for people of his age.

II *"definitely above the average in intellectual capacity"*, if his score lies at or above the 75th percentile;

II+, if his score lies at or above the 90th percentile.

III *"intellectually average"*, if his score lies between the 25th and 75th percentiles;

III+, if his score is greater than the median or 50th percentile for his age;

III-, if his score is less than the median.

IV *"definitely below average in intellectual capacity"*, if his score lies at or below the 25th percentile;

IV-, if his score lies at or below the 10th percentile.

V *"intellectually defective"*, if his score lies at or below the 5th percentile for his age group.

APPENDIX B

page

Copy of letter sent to:

UNIVERSITY OF EDINBURGH
Department of Psychology
60 PLEASANCE, EDINBURGH EH8 9TJ
031-556 7103

Dear .....

The Department of Psychology of Edinburgh University and the Departments of Health and Education are planning a study which is designed to elucidate which type of school (special day school, special residential or ordinary school)is of the most benefit to children who are to some extent incapacitated physically.

This survey depends on our seeing the children in their different school environments to find out how they have integrated or adapted to their schools. The children should find the tests employed entertaining. They have been carefully chosen and disguised so that the children being interviewed will have no idea of the nature of these tests.

Your child .... is one of the very few who fits into the required age-group and who also is of normal intelligence. We should be very pleased therefore if you would grant permission to include ..... in this survey.

We should also like if possible to see you briefly at some stage to hear your opinions on this subject and would be most grateful if you would let us know one way or the other as soon as possible.

Yours sincerely,

UNIVERSITY OF EDINBURGH
Department of Psychology
60 PLEASANCE, EDINBURGH EH8 9TJ
031-556 7103

Dear .....

The Department of Psychology of Edinburgh University and the Departments of Health and Education are undertaking a study which is designed to elucidate which type of school (special day school, special residential or ordinary school) is of the most benefit to children who are to some extent incapacitated physically.

I have already studied children going to special schools. Now I am keen to see pupils who are attending normal schools.

The children are seen in school together with three or four other children from their class so they will not feel they are seen because of their 'disabilities'. The children so far interviewed have found the sessions with me both entertaining and enjoyable.

I should be very grateful for your permission to include ..... in this study as it is important that no pupils of ..... age and sex and who are of normal intelligence should be omitted.

I should like also if possible to see you briefly at some stage to hear your opinions on this subject and would be most grateful if you would let us know one way or the other as soon as possible.

Yours sincerely,

UNIVERSITY OF EDINBURGH
Department of Psychology
60 PLEASANCE, EDINBURGH EH8 9TJ
031-556 7103

Dear .....

I am carrying out an educational survey (in collaboration with the Education Department and School Health Services) in several schools in Edinburgh and the bordering counties. One or two classes are chosen from each school and each child in the class is seen briefly. A few children, however, are chosen at random from each class to help further with the study. They are given carefully chosen tests and so far the children have found the sessions both enjoyable and entertaining.

We would be very grateful if you would agree to ..... taking part in the study. At a later stage I should like to call on you (by appointment) for a short discussion on your views on certain aspects of child-rearing and the education of children in general.

If for any reason you are unwilling perhaps you could let ..... know within the next week or so.

Yours sincerely,

UNIVERSITY OF EDINBURGH
Department of Psychology
60 PLEASANCE, EDINBURGH EH8 9TJ
031-556 7103

Dear ....

I am writing to you in connection with the educational survey I have been undertaking (in conjunction with the Departments of Education and School Health) in the schools in Edinburgh and the bordering counties. .... school participated in the survey and ..... was one of the children chosen to help out. ..... gained a high score on the social adjustment scale and we should be pleased if you would both fill out a questionnaire. We are interested to see if there is a relationship between a child's adjustment and the parent's child-rearing methods/attitudes.

The enclosed questionnaires give each of you an opportunity to indicate how you think children in general should be brought up. It is most important that all the questionnaires sent out are returned. Otherwise we cannot reach any valid conclusions. I had originally hoped to call on you with these forms and discuss your attitudes regarding the educational facilities of physically handicapped children. However, seeing the children in schools has taken up far more time than expected. For this reason I would be very grateful if you could spend 15 minutes or so filling out the forms and returning them to me as soon as possible in the stamped addressed envelope. If, however, you have any problems or further suggestions or recommendations which you would like to discuss in relation to the education of physically handicapped children (of normal intelligence) please let me know a convenient time when I should be happy to call on you. Alternatively perhaps you would just prefer to fill out the single page at the end of the questionnaire which deals with this topic.

Thanking you very much indeed.

Yours sincerely,

UNIVERSITY OF EDINBURGH
Department of Psychology
60 PLEASANCE, EDINBURGH EH8 9TJ
031-556 7103

Dear .....

I am writing to you in connection with the educational survey being undertaken (in conjunction with the Education and School Health Departments) in the schools in Edinburgh and the bordering counties. .... school participated in the survey and .... was one of the children chosen to help out. .... gained a high score on the social adjustment scale and we should be pleased if you would both fill out a questionnaire. We are interested to see if there is a relationship between a child's adjustment and the parents child-rearing methods/attitudes.

The enclosed questionnaires give each of you an opportunity to indicate how you think children in general should be brought up. It is most important that all the questionnaires sent out are returned. Otherwise we cannot reach any valid conclusions. For this reason we would be very grateful if you could spend about 15 minutes or so filling out the forms and return them to me in the stamped addressed envelope as soon as possible.

Thanking you very much indeed.

Yours sincerely,

APPENDIX C

page

Non-standardised tests:

National Foundation for Educational Research

in England and Wales.

1967

SCHOOL QUESTIONNAIRE - S.7.

STRICTLY CONFIDENTIAL

THIS WILL NOT BE SHOWN TO YOUR TEACHER OR HEAD TEACHER

Over the page you will see some of the things boys and girls have said about school. We should like to know what you feel and think about these things - whether you agree or disagree with what other boys and girls have said.

This is NOT a test and there are NO RIGHT and NO WRONG answers.

We want you to answer as truthfully as you can. Just say what you think is most true of you.

Your answers will be strictly confidential.

Here is an example:

	YES, OFTEN	SOMETIMES	NEVER
A. I like watching television			

If you often like watching television, put an Xin the box marked often.

If you sometimes like watching television, put an X in the box marked sometimes.

Here is one for you to try:

	YES	NOT SURE	NO
B. I like ice cream			

1. If I missed a games lesson I should be disappointed.	Yes	Not sure	No
2. I'm sorry when school is over for the day	Always	Sometimes	Never
3. It's nice to fool about in class	Often	Sometimes	Never
4. Teacher gets on well with me.	Most of the time	Sometimes	Hardly ever
5. I get a lot of sums wrong.	Yes, often	Sometimes	Hardly ever
6. When the teacher goes out of the room I play about.	Always	Sometimes	Never
7. I think I'm pretty good at school work	Yes	Not sure	No
8. School lessons are boring	Most of the time	Sometimes	Never
9. My class is nicest of all	Yes	Not sure	No
10. I have no-one to play with at playtime	True Often	Sometimes	Never
11. I should like to be better at games than at school work	Yes	Not sure	No
12. I enjoy doing school tests	Always	Sometimes	Never
13. We spend too much time doing arithmetic	Yes, often	Smetimes	Hardly ever
14. I'd rather be in my class than the other(s) for my age	Yes	Not sure	No
15. I sometimes think I'm no good at anything	Yes, true	Not sure	False
16. Other classes think we're nice in my class	Yes	Not sure	No

3.

17. I think a lot of children of my age would like to be in my class	Yes	Not sure	No
18. My teacher thinks I'm clever	Yes	Not sure	No
19. I bet going out to work is better than school	Yes	Not sure	No
20. I shall be sorry to leave my class	Yes	Not sure	No
21. I'm scared to ask my teacher for help when I don't understand	Yes, often	Sometimes	Never
22. I have no friends I like very much in my class	Yes, true	Not sure	False
23. I enjoy reading	Yes	Not sure	No
24. I like people who get me into mischief	Yes	Not sure	No
25. I like doing hard sums	Yes, often	Sometimes	Never
26. Teacher is always nagging me	Yes	Not sure	No
27. School is boring	Always	Sometimes	Hardly ever
28. I'm happy to be in the class I'm in now	Yes	Not sure	No
29. School work worries me	Yes	Not sure	No
30. I have a best friend in my class	Yes	Not sure	No
31. I feel scared when teacher asks me questions about my work	Yes, often	Sometimes	Never
32. Other children think we're very clever in my class	Yes, true	Not sure	False

33. When we have tests I get very good marks	Most of the time	Sometimes	Hardly ever
34. We have interesting lessons in school	Most of the time	Sometimes	Hardly ever
35. Children who can't do their schoolwork feel ashamed	Yes	Not sure	No
36. I dislike children who are noisy in class	Yes	Not sure	No
37. I hate being in the class I'm in now	Yes	Not sure	No
38. I like children who get into trouble	Yes	Not sure	No
39. Teacher is interested in me	Yes	Not sure	No
40. My class gets blamed for things we don't do	Yes, true	Not sure	False
41. Other classes like my class	Yes	Not sure	No
42. I should feel a little afraid if I got my spellings or sums wrong	Yes	Not sure	No
43. Our teacher treats us as if we're babies	Yes, often	Sometimes	Never
44. I think the other children in my class like me	Yes	Not sure	No
45. I'd prefer to be in another class	Yes	Not sure	No
46. School is fun	Always	Sometimes	Hardly ever
47. I find a lot of school work difficult to understand	Yes, often	Sometimes	Hardly ever
48. I should like to be one of the cleverest pupils in the class	Yes	Not sure	No

5.

49. I work and try very hard in school	Always	Most of the time	Sometimes
50. I'm very good at sums	Always	Sometimes	Hardly ever
51. I don't always get on well with some of the children in my class	Yes, true	Not sure	False
52. I enjoy most school work	Yes	Not sure	No
53. Going to school is a waste of time	Yes	Not sure	No
54. I wish there were nicer children in my class	Yes	Not sure	No
55. My teacher is nice to me	Most of the time	Sometimes	Hardly ever
56. I'm useless at school work	Yes, often	Sometimes	Never
57. If I didn't understand something I should ask my teacher	Always	Sometimes	Never
58. Teacher thinks I'm a trouble maker	Yes	Not sure	No
59. Nobody cares about us in my class	Yes, true	Not sure	False
60. I should like to be very good at school work	Yes	Not sure	No
61. Other children make fun of my class	Often	Sometimes	Never
62. I think my teacher likes me	Yes	Not sure	No
63. I'd like to get away from the children in my class	Yes	Not sure	No
64. I never play about during lessons	Yes, true	Not sure	False

6.

65. When people ask what class I'm in I always feel happy to tell them	Yes	Not sure	No
66. I like school	Yes	Not sure	No
67. I don't seem to be able to do anything really well in school	Yes, true	Not sure	No
68. They are very friendly children in my class	Yes	Not sure	No
69. When we have reading, I often pretend to read	Yes	Not sure	No
70. It would bother me if I got my work wrong	Yes	Not sure	No
71. I like being in my class	Yes	Not sure	No
72. I would leave school tomorrow if I could	Yes	Not sure	No
73. I enjoy being asked questions by my teacher	Yes	Not sure	No
74. I like children who tell jokes in class	Yes	Not sure	No
75. Other classes think they're better than us	Yes	Not sure	No
76. I think nearly everyone in my class likes me	Yes	Not sure	No
77. I get told off by my teacher	Yes, often	Sometimes	Hardly ever
78. Doing well at school is most important to me	Yes	Not sure	No
79. At school they make you do things you don't want to do	Yes	Not sure	No

SHOBEN'S PARENT ATTITUDE SURVEY

INSTRUCTIONS : Read each of the statements below. Rate each statement as to whether you strongly agree, mildly agree, mildly disagree, or strongly disagree. There are no right or wrong answers, so answer according to your own convictions. Work as rapidly as you can. Put a tick in the box that best expresses your feeling.

ITEMS:	strongly agree	mildly agree	mildly disagree	strongly disagree
1. A child should be seen and not heard...				
2. Parents should sacrifice everything for their children.				
3. Children should be allowed to do as they please.				
4. A child should not plan to enter any occupation his parents don't approve of.				
5. Children need some of the natural meanness taken out of them.				
6. A child should have strict discipline in order to develope a fine strong character.				
7. The mother, rather than the father, should be responsible for discipline.				
8. Children should be 'babied' until they are several years old.				
9. Children should have the right to play with whomever they like.				
10. Independent and mature children are less lovable than those children who openly and obviously want and need their parents.				
11. Children should be forbidden to play with youngsters whom their parents do not approve of.				
12. A good way to discipline a child is to tell him his parents wont love him any more if he is bad.				
13. Severe discipline is essential in the training of children.				
14. Parents cannot help it if their children are naughty.				
15. Jealousy among brothers and sisters is a very unhealthy thing.				
16. Children should be allowed to go to any Sunday School their friends go to.				

	strongly agree	mildly agree	mildly disagree	strongly disagree
17. No child should ever set his will against that of his parents.				
18. The Biblical command that children should obey their parents should be completely adhered to.				
19. It is wicked for children to disobey their parents.				
20. A child should feel a deep sense of obligation always to act in accord with the wishes of his parents.				
21. Children should not be punished for disobedience.				
22. Children who are gentlemanly or ladylike are preferable to those who are tomboys or " regular guys ".				
23. Strict discipline weakens a child's personality.				
24. Children should always be loyal to their parents above anyone else.				
25. Children should be steered away from the temptations of religious beliefs other than those accepted by the family.				
26. The weaning of a child from the emotional ties to its parents begins at birth.				
27. Parents are not entitled to the love of their unless they earn it.				
28. Parents should never try to break a child's will.				
29. Children should not be required to take orders from their parents.				
30. Children should be allowed to choose their own religious beliefs.				
31. Children should not interrupt adult conversation.				
32. The most important consideration in planning the activities of the home should be the needs and interests of the children.				
33. Quiet children are much nicer than little " chatter boxes ",				
34. It is sometimes necessary for the parent to break the child's will.				
35. Children usually know ahead of time whether or not parents will punish them for their actions.				

		strongly agree	mildly agree	mildly disagree	strongly disagree
36.	Children resent discipline.				
37.	Children should not be permitted to play with children from the "wrong side of the tracks".				
38.	When the parent speaks, the child should obey.				
39.	Mild discipline is best.				
40.	The best child is one that shows lots of affection for it's mother.				
41.	A child should be taught that his parents always know what is best.				
42.	It is better for children to play at home than to visit other children.				
43.	Most children should have more discipline than they get.				
44.	A child should do what he is told, without stopping to argue about it.				
45.	Children should fear their parents to some degree.				
46.	A child should always love his parents above anyone else.				
47.	Children who indulge in sex play become adult sex criminals.				
48.	Children should be allowed to make only minor decisions for themselves.				
49.	A child should always accept the decision of his parents.				
50.	Children who readily accept authority are much nicer than those who try to be dominant themselves.				
51.	Parents should always have complete control over the actions of their children.				
52.	When they can't have their own way, children usually try to bargain or reason with their parents.				
53.	The shy child is worse off than the one who masturbates				
54.	Children should accept the religion of their parents without question.				

	strongly agree	mildly agree	mildly disagree	strongly disagree
55. The child should not question the commands of his parents.				
56. Children who fight with their brothers and sisters are generally a source of great irritation and annoyance to their parents.				
57. Children should not be punished for doing anything they have seen their parents do.				
58. Jealousy is just a sign of selfishness.				
59. Children should be taught the value of money early.				
60. A child should be punished for contradicting his parents.				
61. Children should have lots of parental supervision.				
62. A parent should see to it that his child plays only with the right kind of children.				
63. Babies are more fun for parents than older children are.				
64. Parents should supervise a child's selection of playmates very carefully.				
65. No one should ask a child to respect parents who nag and scold.				
66. A child should always believe what his parents tell him.				
67. Children should usually be allowed to have their own way.				
68. A good way to discipline a child is to cut down his allowance.				
69. Children should not be coaxed or petted into obedience.				
70. A child should be shamed into obedience if he won't listen to to reason.				
71. In the long run it is better, after all, for a child to be kept fairly close to his mother's apron strings.				
72. A good whipping now and then never hurt any child.				
73. Masturbation is the worst bad habit that a child can form.				
74. A child should never keep a secret from his parents.				
75. Parents are usually too busy to answer all a child's questions.				

	strongly agree	mildly agree	mildly disagree	strongly disagree
76. The children who make the best adults are those who obey all the time.				
77. It is important for children to have some kind of religious upbringing.				
78. Children should be allowed to manage their affairs with little supervision from adults.				
79. Parents should never enter a child's room without permission.				
80. It is best to give children the impression that parents have no faults.				
81. Children should not annoy their parents with their unimportant problems.				
82. Children should give their parents unquestioning obedience.				
83. Sex is one of the greateast problems to be contended with in children.				
84. Children should have as much freedom as their parents allow themselves.				
85. Children should do nothing without the consent of their parents.				

(1) Do you feel ..... is as well placed as possible?

YES ..... NO .....

If "NO", would ..... be better placed at:-

Regular class in an ordinary school .....

Special class in an ordinary school .....

Special school .....

Ordinary Boarding School .....

Special Residential School .....

Other Educational System .....

Please specify

If possible please give reasons for your recommendations

.....

.....

.....

(2) Mother only

Do you work? YES ..... No .....

If "YES" are you: Part-time ..... Full-time .....

TEACHER ASSESSMENT

Tick statement applicable to the child.

NAME OF CHILD .....

1. Please give the following details about this child's present class:

   (a) Number of children on the roll .....

   (b) Sex of children in the class:

   Boys only .....

   Girls only .....

   Mixed .....

   (c) What is the average of the children in this class?.....yrs...mths

2. Are the children streamed for ability within each year?

   Yes ..... No .....

   (a) If 'Yes', how many streams are there?.....

   (b) If 'Yes', in which stream is this child?.....

   If in Special Class or Stream for backward children please give details:

   .....

   .....

3. Please give this child's position in his/her class at the time of the last placing. (If the children in the class are not placed, please give estimate)

   In the top quarter .....

   In the middle half .....

   In the bottom quarter .....

4. Is there any general school subject(s) in which this child's performance is outstandingly good?

   Yes ..... No .....

   (a) If 'Yes', in which subject(s) is he/she outstandingly good?.....

   .....

5. Is there any general school subject(s) in which this child's performance is outstandingly bad?

   Yes ..... No .....

   (a) If 'Yes', in which subject(s) is he/she outstandingly bad?.....

   .....

6. Has this child been punctual in attending school during the last year?

   Never late unless with good reason .....

   sometimes late .....

   persistently late .....

7. Has this child played truant during the last year?

   Yes, frequently .....

   Yes, occasionally .....

   Never .....

8. Do you consider that this child's school work is adversely affected by any physical handicap?

   Yes ..... No .....

   If 'Yes', please give details .....

   .....

9. Do you consider that this child's school work is adversely affected by any factors outside the school(eg. home circumstances, out of school activities, etc.)?

   Yes ..... No .....

   If 'Yes' please give details: .....

   .....

10. Are there any 'out of school' activities in which this pupil shows exceptional ability?

    Yes ..... No .....

    If 'Yes', please give details: .....

    .....

11. Please assess this child's ability at games in relation to the other children in the class.

    Above average .....

    Average .....

    Below average .....

12. Do you regard this child as :

    Extremely energetic, never tired .....

    Normally energetic .....

    Always tired and 'washed out' .....

13. Have you discussed this child's education with either of his/her parents during the past year?

Yes, both .....

Yes, mother only .....

Yes, father only .....

Neither .....

(a) To what extent do this child's parents show interest in his/her progress at school?

Very interested .....

Average interest .....

Little or no interest .....

SCHOOL ATTENDANCE

14. Is the child's attendance at school:

Good ..... Fair..... Poor..... A severe problem.....

15. How much schooling has he/she missed for any reason in the present school year.

	Attendances made by this child	Attendances that could have been made
Winter Term	.....	.....
Spring Term	.....	.....
Summer Term	.....	.....

16. Has the child been admitted to hospital during the present school year (since September)?

Yes ..... No ..... Don't know .....

(a) How long was the child away from school for this reason

..... number of days.

(b) If admitted, for what reason was the child in hospital?

Specify if known .....

17. Does he/she have physiotherapy?

Yes ..... No.....

If 'Yes', does he/she attend a hospital clinic .....

school clinic .....

privately .....

If 'Yes', how many hours a week does he have this treatment?.....

If 'Yes', how many hours school work does he have to miss a week? .....

18. Does he/she have speech Therapy?

Yes ..... No.....

If 'Yes', does he/she attend a hospital clinic .....

school clinic .....

privately .....

If 'Yes', how many hours a week does he/she have this treatment?.....

If 'Yes', how many hours school work does he/she have to miss a week?.....

19. Does he/she have occupational therapy?

Yes ..... No.....

If 'Yes', does he/she attend a hospital clinic .....

school clinic .....

privately .....

If 'Yes', how many hours a week does he/she have this treatment?....

If 'Yes', how many hours school work does he/she have to miss a week?.....

20. Are there any school activities in which he/she is not allowed to take part?

Yes ..... No.....

If 'Yes', please specify activity and reasons for not taking part...

.....

.....

If 'Yes' by whose authority is he/she not allowed to take part (parent, teacher, school doctor, G.P. etc.).....

.....

21. Does he/she have a special diet for meals at school?

Yes ..... No .....

22. Does he/she go home for lunch because of a special diet?

Yes ..... No .....

23. Have special arrangements been made for transport to and from school?

If 'Yes', please specify .....

.....

HEALTH

24. Speech

Is this child's speech:

entirely normal .....

abnormal in some way, but distinct, clear and easily understandable .....

speech not quite distinct or clear but easily understandable .....

understandable with some difficulty .....

understandable with considerable difficulty .....

hardly understandable at all .....

If speech is abnormal or unclear in any way, please describe the child's speech difficulty .....

.....

SIGHT

25. Has this child any difficulty with sight even when wearing glasses?

Yes, marked difficulty .....

Yes, moderate difficulty .....

Yes, slight difficulty .....

No .....

If 'Yes', please describe.....

HEARING

26. Has this child any difficulty with hearing?

Yes, marked difficulty .....

Yes, moderate difficulty .....

Yes, slight difficulty .....

No .....

If 'Yes' please describe.....

SITTING BALANCE

27. Has this child difficulty in maintaining sitting balance?

Yes, marked difficulty .....

Yes, moderate difficulty .....

Yes, slight difficulty .....

No .....

If 'Yes' please describe.....

ARM-HAND USE

28. Has this child any difficulty in using arms and hands for self-help activity?

Yes, marked difficulty .....

Yes, moderate difficulty .....

Yes, slight difficulty .....

No .....

If 'Yes' please describe .....

WALKING

29. Has this child any difficulty in walking?

Yes, unable to walk .....

Yes, cannot walk independently .....

Yes, some difficulty(e.g. unsteady gait) .....

No .....

(a) Child gets around mainly be means of:

wheelchair	.....	Bonaped	.....
amesbury chair	.....	Crutches	.....
frame-walker(wheels)	.....	sticks	.....
frame-walker(legs)	.....		
rollator	.....		
tripods	.....		

COORDINATION

30. Is this child clumsy or poorly coordinated for his/her age?

Yes, marked clumsiness .....

Yes, moderate clumsiness .....

Yes, slight clumsiness .....

No .....

If 'Yes', please describe.....

ENERGY

31. Has this child usually a normal amount of energy?

Bounding with energy .....

Just normal amount of energy .....

Tired, sluggish or lacking in energy .....

Very sluggish, tired, or lacking in energy .....

SEVERE HEADACHES

32. In the present school year has he/she had any severe headaches at school(sufficient to affect his/her concentration)?

Yes ..... No .....

(a)If 'Yes' how many days have they occured at school in the present school year?

..... number of days

(b)How often in the present school year has he/she had to be sent home from school because of a severe headache?

..... number of days

(c)Are these headaches sometimes accompanied by vomiting?

Yes ..... No .....

FITS

33. Has he/she had any fits (e.g. momentary blank spells or falling down unconcious with or without twitching of his/her limbs) at school in the past school year.

Yes ..... No .....

(a) If 'Yes' what do his/her fits consist of?
Put a cross in all boxes that apply

momentary blank spells .....

falling down unconscious without twitchings .....

falling down unconscious with twitchings .....

other type of attack .....

please specify.....

(b) If 'Yes', how often do they occur?.....
(c) Has he/she been sent home after a fit?

Yes ..... No .....

If 'Yes', how many times has this occured?.....

ASTHMA

34. Has he/she had any asthma or attacks of wheezing at school in the present school year (including wheezing on exercise)

Yes ..... No .....

If 'Yes' how often have they occured at in the present school year?

..... number of times

If 'Yes' how often in this period has he/she been sent home after an attack?

..... number of times

35. Does the child show any of the following tendancies? Please put a cross where appropriate

	None	Slight	Moderate	Severe	In Past	At Present
Incontinence (bladder)						
Incontinence (bowels)						
Hypocondriac tendencies						
Fainting turns						
Feelings of nausea						
Temper tantrums						
Nail biting						
Nose picking						
Thumb or finger sucking						
Picking sores						
Nervous twitches or grimaces						

36. Is the child's general health:

Good .....

Fair .....

Poor .....

A severe problem .....

Stable health with severe physical incapacity .....

ATTITUDE TO DISABILITY

37. Is the child coping well with his handicap .....

Having considerable difficulties .....

Unable to cope unaided .....

Describe.....

.....

Does he try to hide his disability .....

Does he/she try to ignore his/her disability .....

Does he/she try to do both .....

Does he/she use his/her disability to get his/her own way .....

38. Does the child get bullied or teased?

Yes, frequently .....

Yes, occasionally .....

No .....

(a) If 'Yes', is this due to the child's disability? Yes..... No...

(b) If 'Yes', how does the child react to it?.....

.....

39. Are there any other problems in the health or education of this child?

Please specify..... .....

.....

40. What kind of school and class is this child in now?

Day school .....

Boarding school .....

Regular class in an ordinary school .....

" " " " " "

but attends adjustment class(part-time) .....

Remedial or progress class in ordinary school .....

Special school .....

41. Is the child as well placed as possible?

Yes ..... No .....

If 'No', the child would be better placed at (another):

Regular class in an ordinary school .....

Remedial class in an ordinary school .....

Special school .....

Ordinary boarding school .....

Special residential school .....

Other .....

Specify.....

Please give reasons for this recommendation.....

.....

APPLIANCES

This child wears:

Glasses .....

Hearing aid .....

Special boots or shoes.....

Calipers: Left leg ..... Right leg ..... Both .....

Incontinence apparatus .....

Artificial limb:

Arm: Left ..... Right ..... Both .....

Leg: Left ..... Right ..... Both .....

How well do you know this child?

Very well .....

Moderately well .....

Not very well .....

APPENDIX D

page

Tables:

Barker Lunn's Scales broken down by sex for P H children

Attitude to School	Girls (N=51)		Boys (N=63)		F-ratio
All	4.20	1.67	3.67	1.57	3.03
OD	4.24	1.56	3.62	1.69	1.3377
SD	4.65	1.73	3.52	1.33	5.1337
SR	3.71	1.69	3.86	1.71	.0743
Interest in School Work					
All	3.59	1.56	3.21	1.48	1.78
OD	3.35	1.58	3.24	1.18	.0659
SD	3.88	1.69	3.19	1.63	1.6353
SR	3.53	1.46	3.19	1.66	.4343
Importance of doing well					
All	7.41	2.06	7.16	2.03	.4330
OD	6.88	1.96	6.71	2.08	.0645
SD	7.47	2.27	7.10	1.97	.2977
SR	7.88	1.93	7.67	2.01	.1120
Attitude to Class					
All	12.43	3.15	12.49	3.28	.0100
OD	12.82	2.30	12.95	3.11	.0202
SD	13.06	2.66	12.52	3.68	.2520
SR	11.41	4.12	12.00	3.11	.2511
Other Image of school					
All	3.88	1.05	3.70	1.07	.8439
OD	3.53	.94	3.29	1.01	.5818
SD	4.47	.87	4.00	1.00	2.3235
SR	3.65	1.12	3.81	1.12	.1978
Conforming behaviour					
All	3.75	.99	3.27	1.32	4.5675
OD	3.59	1.23	2.76	1.61	3.0416
SD	4.06	.90	3.33	1.07	4.9992
SR	3.59	.71	3.71	1.10	.1658
Relationship with Teacher					
All	3.35	1.57	3.06	1.68	.8833
OD	3.18	1.74	2.76	1.73	.5368
SD	3.94	1.48	3.29	1.71	1.5586
SR	2.94	1.39	3.14	1.65	.1609
Anxiety about school work					
All	2.53	1.42	3.05	1.46	3.6293
OD	2.77	1.09	2.62	1.24	.1435
SD	3.06	1.25	3.29	1.45	.2590
SR	1.77	1.60	3.24	1.64	7.7393
Social Adjustment					
All	2.92	1.29	3.37	1.26	3.4062
OD	2.82	1.29	3.29	1.34	1.1512
SD	3.60	1.23	3.43	1.29	1.0871
SR	2.94	1.44	3.38	1.20	1.0568
Academic self-image					
All	10.06	2.80	10.32	3.44	.1874
OD	9.88	3.59	9.67	3.40	.0361
SD	11.12	2.06	10.52	2.87	.5119
SR	9.18	2.33	10.76	4.02	2.0721

Barker Lunn's Scales broken down by sex for Control children

Attitude to School	Girls (N=51)		Boys (N=63)		F-ratio
All	4.04	1.34	3.43	1.70	4.3700
OD	3.82	1.47	3.38	1.94	.6054
SD	4.06	1.20	3.24	1.79	2.6261
SR	4.24	1.39	3.67	1.39	1.5684
Interest in School Work					
All	3.53	1.10	3.00	1.52	4.3220
OD	3.71	.85	3.14	1.62	1.6725
SD	3.41	1.33	2.91	1.70	1.0118
SR	3.47	1.13	2.95	1.28	1.7076
Importance of doing well					
All	8.21	1.38	7.60	1.67	4.4238
OD	8.24	1.35	7.48	1.44	2.7724
SD	8.06	1.56	7.43	1.99	1.1377
SR	8.35	1.27	7.91	1.58	.8975
Attitude to class					
All	12.88	2.62	11.67	3.14	4.8937
OD	13.65	1.41	12.24	3.52	2.4005
SD	13.12	2.67	11.57	3.19	2.5515
SR	11.88	3.26	11.19	2.71	.5107
'Other' Image of class					
All	3.88	1.03	2.92	1.25	19.4772
OD	3.82	1.07	2.86	1.06	7.6959
SD	3.65	1.12	3.14	1.49	1.3340
SR	4.18	.88	2.76	1.18	16.8013
Conforming behaviour					
All	3.18	.99	3.06	1.16	.3026
OD	3.29	.85	3.14	.96	.2571
SD	3.18	1.02	3.33	1.20	.1844
SR	3.06	1.14	2.71	1.27	.7543
Relationship with teacher					
All	2.65	1.47	2.67	1.66	.0044
OD	2.29	1.31	2.43	1.29	..1008
SD	2.94	1.75	2.81	1.99	.0457
SR	2.71	1.31	2.76	1.67	.0127
Anxiety about School work					
All	2.71	1.51	3.11	1.39	2.21
OD	3.12	1.54	3.38	1.50	.2835
SD	3.00	1.58	3.19	1.33	.1631
SR	2.00	1.23	2.76	1.34	3.2826
Social adjustment					
All	2.61	1.22	2.98	1.23	2.67
OD	2.53	1.18	2.81	1.29	.4784
SD	2.35	1.32	3.24	1.22	4.5931
SR	2.94	1.14	2.91	1.18	.0092
Academic Self-image					
All	9.29	2.94	11.22	3.19	11.0346
OD	9.77	2.59	9.95	2.56	.0500
SD	9.94	2.38	11.71	3.68	2.9436
SR	8.18	3.56	12.00	2.98	12.9956

Barker Lunn's Scales broken down by the presence or absence of neurological abnormalities for MH children

	MH children with neurological abnormalities		MH children without neurological abnormalities		F-ratio
Attitude to school					
All	3.73	1.75	4.18	1.39	2.1116
OD	3.83	1.88	4.00	1.18	.0890
SD	3.92	1.67	4.21	1.53	.2993
Sr	3.41	1.74	4.31	1.49	2.8129
Interest in school work					
All	3.16	1.61	3.73	1.32	3.87
OD	3.08	1.38	3.64	1.28	1.5321
SD	3.29	1.85	3.86	1.29	1.0110
SR	3.09	1.63	3.69	1.45	1.3603
Importance of doing well					
All	7.22	2.02	7.34	2.08	.0815
OD	6.46	2.06	7.36	1.82	1.8215
SD	7.38	2.04	7.07	2.24	.1827
SR	7.90	1.74	7.56	2.25	.2866
Attitude to class					
All	12.49	3.45	12.43	2.82	.0075
OD	12.58	3.16	13.43	1.79	.8387
SD	12.83	3.82	12.64	1.99	.0301
SR	12.00	3.44	11.38	3.81	.2799
'Other' image of class					
All	3.81	1.05	3.73	1.09	.1798
OD	3.25	1.03	3.64	.84	1.4573
SD	4.33	.82	4.00	1.18	1.0610
SR	3.86	1.04	3.56	1.21	.6792
Conforming behaviour					
All	3.60	1.23	3.30	1.13	1.75
OD	3.29	1.63	2.86	1.23	.7450
SD	3.71	.91	3.57	1.28	.1477
SR	3.82	1.01	3.44	.81	1.5483
Relationship with teacher					
All	3.10	1.68	3.34	1.57	.5851
OD	2.63	1.66	3.50	1.74	2.3634
SD	3.63	1.72	3.50	1.51	.0513
SR	3.05	1.56	3.06	1.53	.0011
Anxiety about school work					
All	2.59	1.45	3.18	1.42	4.64
OD	2.58	1.28	2.86	.95	.4817
SD	2.83	1.37	3.79	1.22	4.8371
SR	2.32	1.70	2.94	1.84	1.1450
Social Adjustment					
All	3.30	1.27	2.96	1.31	1.9562
OD	3.00	1.32	3.21	1.37	.2272
SD	3.42	1.18	2.93	1.39	1.3360
SR	3.50	1.30	2.75	1.24	3.2066
Academic self-image					
All	9.84	3.18	10.77	3.08	2.3676
OD	9.58	3.72	10.07	2.99	.1744
SD	10.50	2.45	11.29	2.67	.8513
SR	9.41	3.28	10.94	3.53	1.8896

APPENDIX E

Raw data

Page

Bene-Anthony Family Relations Test

P.H. at Ordinary Day Schools

PERSONAL DATA

Child No	Age in months	Social class	Family size	Position in family	Medical diagnosis	with or without neurological damage	Degree of disability	Visual impact of disability	Major functional handicap	School attendance number of half-day absences	Environmental home circumstances		
1	113	III N	2	1	1	1	8	2	1	21	1		
2	111	II	2	1	5	2	8	3	2	15	2		
3	113	I	3	1	2	1	13	4	1	30	1		
4	113	IV	2	1	1	1	8	3	1	9	1		
5	115	IV	7	5	1	1	8	2	1	58	4		
6	127	III N	4	3	1	1	11	3	1	24	1		
7	125	III M	5	5	1	1	8	2	1	33	2		
8	131	I	3	1	1	1	9	2	1	30	1		
9	129	III M	1	1	1	1	8	2	1	17	1		
10	121	III M	4	3	1	1	11	3	1	8	3		
11	134	III M	3	2	7	2	9	3	1	204	1		
12	143	III N	2	1	1	1	8	2	1	38	1		
13	135	III M	1	1	1	1	9	2	2	14	1		
14	138	II	4	1	5	2	8	3	2	28	1		
15	143	III M	2	2	4	2	8	3	1	84	1		
16	143	IV	2	1	1	1	12	3	1	65	1		
17	132	V	4	1	5	2	8	2	4	1	2		
18	111	III N	2	2	1	1	10	2	1	19	1		
19	117	IV	2	1	1	1	12	3	1	10	1		
20	109	IV	2	2	1	1	9	1	1	6	3		
21	108	I	3	3	1	1	10	2	1	49	1		
22	112	II	1	1	1	1	9	3	1	17	1		
23	115	II	3	1	7	2	8	3	1	19	1		
24	113	III N	4	3	5	2	10	3	2	14	3		
25	130	III N	2	1	1	1	8	2	1	4	1		
26	130	III N	2	2	7	2	8	2	1	58	1		
27	120	II	2	2	1	1	9	2	1	10	1		
28	131	III N	3	2	1	1	12	3	1	0	3		
29	127	III M	4	4	7	2	8	3	1	81	1		
30	122	IV	4	1	3	2	9	1	3	39	1		
31	128	II	2	1	7	1	10	1	1	16	1		
32	143	III M	2	2	5	2	9	2	1	41	3		
33	137	V	5	3	1	1	8	2	1	10	4		
34	139	II	3	2	4	2	10	3	1	10	1		
35	137	IV	4	2	7	2	8	2	2	29	1		
36	139	II	2	2	1	1	11	2	1	42	1		
37	143	V	4	3	7	2	8	3	1	12	3		
38	143	III M	3	2	1	1	10	2	1	1	1		

P.H. at Special Day Schools

PERSONAL DATA

Child No	Age in months	Social class	Family size	Position in family	Medical diagnosis	with or without neurological damage	Degree of disability	Visual impact of disability	Major functional handicap	School attendance number of half-day absences	Environmental home circumstances		
1	119	II	2	2	7	1	10	1	2	38	1		
2	113	III M	2	1	6	2	11	4	1	32	1		
3	109	IV	4	3	7	1	9	2	1	26	1		
4	108	III M	2	2	2	1	12	4	1	40	2		
5	108	I	2	1	7	2	10	2	2	28	1		
6	125	IV	2	1	7	2	9	3	1	28	3		
7	120	III M	2	2	3	2	9	4	1	88	1		
8	126	II	2	2	1	1	12	3	1	44	1		
9	127	III M	2	2	1	1	10	2	1	56	2		
10	114	III M	3	3	2	1	14	4	1	39	1		
11	122	IV	3	1	1	1	8	1	1	54	1		
12	132	IV	10	6	1	1	12	3	2	8	2		
13	137	III M	7	7	1	1	8	2	2	68	3		
14	143	V	3	1	1	1	17	5	1	8	2		
15	132	I	2	2	7	2	9	4	1	18	1		
16	143	III M	3	3	6	2	9	1	1	26	1		
17	143	III N	2	2	1	1	9	2	2	14	1		
18	114	III M	2	2	6	2	11	4	1	32	1		
19	110	III M	6	5	1	1	8	2	1	38	4		
20	108	III N	5	4	5	2	9	4	2	32	3		
21	108	III N	2	2	1	1	10	3	2	28	1		
22	117	III N	1	1	1	1	9	3	1	40	1		
23	111	II	3	3	1	1	10	3	1	60	1		
24	108	I	2	2	1	1	15	5	1	44	1		
25	122	III M	5	1	1	1	9	3	1	14	1		
26	130	II	1	1	4	2	12	3	1	134	1		
27	120	III N	2	1	5	2	11	4	2	92	3		
28	120	III M	3	1	7	1	10	1	2	92	1		
29	126	II	4	1	5	2	17	5	1	248	1		
30	127	IV	2	1	5	2	12	4	2	20	1		
31	135	III N	3	2	1	1	14	3	2	52	1		
32	134	V	3	2	7	2	7	3	0	6	4		
33	139	III M	1	1	1	1	10	2	1	48	3		
34	136	IV	1	1	2	1	12	4	1	26	1		
35	137	V	2	2	2	1	12	4	1	112	3		
36	137	III M	4	3	3	2	11	3	1	56	1		
37	135	IV	3	3	1	1	9	2	1	26	3		
38	142	II	2	2	1	1	12	3	5	16	1		

P.H. at Special Residential Schools — PERSONAL DATA

Child No	Age in months	Social class	Family size	Position in family	Medical diagnosis	with or without neurological damage	Degree of disability	Visual impact of disability	Major functional handicap	School attendance number of half-day absences	Environmental home circumstances		
1	114	IIIM	4	4	3	2	10	2	3	13	3		
2	113	I	2	2	5	2	10	4	2	33	3		
3	119	I	3	1	5	2	13	5	1	20	3		
4	112	IIIN	1	1	3	2	10	2	3	48	3		
5	111	IV	4	3	2	1	13	4	1	27	1		
6	123	IV	1	1	7	2	8	4	1	0	1		
7	121	IIIM	3	2	5	2	13	4	2	1	1		
8	122	IIIM	4	3	5	2	11	5	1	0	1		
9	126	II	2	1	1	1	10	3	1	22	1		
10	128	IIIM	5	2	2	1	12	4	1	122	1		
11	124	IIIN	3	1	2	1	12	4	1	5	1		
12	140	IIIM	4	2	2	1	16	5	1	32	4		
13	132	V	5	1	2	1	10	3	1	35	4		
14	143	IV	5	5	1	1	10	2	1	46	2		
15	143	IIIM	1	1	1	1	9	3	1	10	1		
16	141	II	6	2	6	2	10	2	1	69	3		
17	143	V	6	3	2	1	12	4	1	170	3		
18	113	IIIN	1	1	2	1	11	4	1	84	1		
19	108	IIIM	3	3	2	1	10	3	1	31	1		
20	108	IV	6	2	2	1	8	2	1	29	2		
21	113	V	3	3	2	1	16	5	1	159	1		
22	114	IV	2	1	2	1	11	3	1	169	1		
23	113	II	1	1	1	1	13	4	1	2	1		
24	108	IIIN	2	1	1	1	16	5	1	12	1		
25	131	IIIM	2	2	5	2	12	5	1	20	1		
26	131	IIIM	2	1	1	1	13	4	1	48	1		
27	120	II	2	1	6	2	13	4	1	0	1		
28	120	II	1	1	6	2	13	4	1	6	1		
29	131	IV	7	2	7	2	9	4	1	33	1		
30	130	IIIM	1	1	7	2	11	4	1	107	1		
31	124	IIIM	3	1	2	1	14	4	1	55	1		
32	129	IIIM	1	1	1	1	11	1	1	0	2		
33	137	IV	3	2	2	1	15	5	1	88	1		
34	137	IV	3	1	1	1	12	2	1	37	1		
35	137	II	3	2	7	2	11	4	1	12	3		
36	133	IIIM	2	1	5	2	12	5	1	25	3		
37	133	V	4	3	2	1	8	2	1	133	4		
38	141	IIIM	3	1	6	2	11	4	1	33	1		

Controls for P.H. at:-

PERSONAL DATA

Child No	Ordinary Day School							Special Day School							Special Residential School						
	Age in months	Social class	Family size	Position in family	School absence No of ½-days	Environmental home circumstances		Age in months	Social class	Family size	Position in family	School absence No of ½-days	Environmental home circumstances		Age in months	Social class	Family size	Position in family	School absence No of ½-days	Environmental home circumstances	
1	113	IIIN	2	1	102	3		111	II	2	1	9	1		116	II	3	3	34	1	
2	112	IIIN	1	1	44	1		116	I	2	2	18	1		117	II	3	2	6	1	
3	117	II	3	2	42	3		119	IIIN	4	4	6	1		111	II	6	4	9	1	
4	108	IIIN	2	2	14	1		117	IIIM	3	1	10	1		113	II	4	4	2	1	
5	111	IV	7	6	36	1		109	I	1	1	5	1		119	II	3	3	23	1	
6	127	II	7	7	46	2		121	II	2	2	24	3		125	II	2	2	34	1	
7	124	IIIM	4	3	15	1		127	IV	3	2	20	2		131	IIIN	3	2	0	1	
8	131	IIIN	4	4	19	2		122	IV	6	5	17	2		141	II	2	1	18	1	
9	118	IIIM	4	4	20	1		135	IIIM	3	3	20	1		131	IIIN	4	4	34	1	
10	123	IIIN	4	3	0	2		129	IIIM	4	1	14	1		133	II	2	2	5	1	
11	135	IIIM	3	1	2	1		127	I	3	3	10	1		131	II	3	1	22	1	
12	143	IIIN	5	2	16	1		137	IIIN	4	3	47	1		139	II	3	1	0	1	
13	135	IV	4	2	7	2		140	V	3	1	28	4		137	IIIN	1	1	6	1	
14	135	I	4	2	2	1		142	IIIM	2	2	15	2		139	II	3	3	10	1	
15	143	IV	1	1	5	1		137	II	3	1	23	1		143	II	2	1	0	1	
16	139	IIIM	3	1	7	2		141	I	3	2	4	1		136	I	2	2	6	1	
17	137	V	6	4	46	2		143	IIIN	2	2	52	1		139	II	3	3	4	1	
18	110	II	2	2	4	1		118	V	2	2	13	1		118	II	3	2	47	1	
19	115	IV	2	2	2	1		118	IIIN	3	1	2	2		116	I	3	2	3	1	
20	118	IIIM	3	2	11	1		118	IIIN	3	2	24	3		112	II	2	2	3	1	
21	110	I	3	2	0	1		116	IIIN	2	1	2	1		114	I	2	2	3	1	
22	112	II	2	2	6	1		119	IIIN	2	1	3	1		117	I	1	1	2	1	
23	117	I	3	2	33	1		116	II	2	2	2	1		112	II	3	3	3	1	
24	116	IIIM	2	1	0	1		117	IIIM	2	2	0	1		111	II	3	2	0	1	
25	131	IIIN	2	1	3	2		121	IIIM	3	1	10	2		131	IIIN	2	2	4	1	
26	130	II	2	1	2	1		121	II	2	1	10	1		131	IIIN	3	3	0	1	
27	125	II	2	1	2	1		127	II	2	2	10	1		126	II	3	3	5	1	
28	129	IIM	3	2	6	1		120	IIIM	1	1	6	1		125	IIIN	3	1	2	1	
29	124	II	2	1	2	2		122	IV	3	1	2	2		132	II	2	1	0	1	
30	126	V	6	1	2	2		128	IIIM	4	3	33	2		125	II	1	1	8	1	
31	122	II	2	1	4	1		142	IV	3	2	11	2		131	I	3	2	0	1	
32	143	IV	5	4	0	1		134	V	5	2	5	4		135	II	2	1	0	1	
33	132	IIIM	6	3	60	4		143	IIIM	1	1	14	2		143	II	3	1	0	1	
34	132	IIIM	3	1	3	1		137	IIIM	3	3	27	2		139	I	4	1	0	1	
35	137	IIIM	4	4	0	1		138	IV	3	1	28	3		137	I	5	5	0	1	
36	142	IIIM	3	2	18	1		135	IIIM	4	1	5	1		135	II	2	2	5	1	
37	143	IV	3	2	2	1		143	IV	3	3	5	2		141	II	2	2	4	1	
38	143	IIIN	3	1	5	1		134	IIIM	4	4	9	2		141	II	3	1	46	1	

VERBAL & NON-VERBAL INTELLIGENCE (raw-scores)

Child No.	Raven's Progressive Matrices						Crichton & Mill Hill Vocabulary Test						
	OD	SD	SR	ODC	SDC	SRC	OD	SD	SR	ODC	SDC	SRC	
1	21	23	26	22	21	30	47	42	28	50	39	57	
2	32	33	30	31	33	33	50	48	46	58	55	48	
3	25	22	26	25	23	25	56	41	41	49	41	48	
4	26	26	26	26	31	29	60	36	43	57	62	46	
5	18	16	18	18	18	21	38	44	30	35	44	48	
6	21	20	21	21	22	30	42	36	48	45	34	61	
7	24	28	26	23	31	33	44	46	45	44	39	68	
8	32	26	24	32	27	38	49	50	46	47	49	41	
9	19	19	23	21	20	28	30	34	40	47	47	50	
10	20	18	23	18	22	30	26	53	35	41	39	58	
11	27	26	23	30	28	28	45	48	49	45	68	59	
12	19	28	41	19	29	39	24	49	22	37	56	35	
13	18	26	24	21	29	18	43	37	37	42	24	67	
14	38	39	31	30	37	34	35	27	32	73	35	29	
15	45	34	44	45	34	39	39	72	40	37	71	30	
16	31	45	48	39	46	34	24	38	27	30	39	71	
17	23	32	29	23	36	36	33	28	19	36	33	33	
18	27	28	24	28	31	26	59	36	31	58	51	49	
19	27	22	23	25	27	26	45	32	27	42	47	59	
20	27	27	31	30	30	32	43	38	37	64	58	59	
21	29	29	19	28	31	17	60	45	31	46	56	58	
22	27	31	28	26	31	29	59	67	33	55	58	61	
23	35	30	34	35	32	31	70	45	46	66	60	57	
24	30	33	26	32	32	22	54	57	46	63	68	44	
25	29	29	29	30	30	32	66	62	58	60	49	64	
26	34	32	32	35	29	30	56	47	58	60	56	69	
27	31	32	35	31	34	35	63	43	58	64	63	60	
28	24	25	23	28	23	27	38	37	45	55	52	61	
29	30	33	30	31	36	34	57	48	60	64	65	73	
30	25	27	26	26	26	27	41	44	58	50	50	52	
31	26	30	25	25	41	33	56	42	41	50	31	60	
32	41	30	25	36	28	33	26	39	30	37	54	66	
33	23	27	21	23	28	47	38	22	38	44	35	36	
34	39	28	30	30	30	41	34	69	63	61	56	38	
35	31	27	35	33	36	34	61	71	70	68	28	74	
36	32	28	25	33	27	33	36	42	46	31	56	69	
37	30	20	26	29	28	41	31	40	39	33	31	35	
38	32	28	26	41	24	39	27	25	24	40	59	36	

P.H at Ordinary Day School SOCIAL DISCRIMINATION QUESTIONNAIRE

Child No.	No of children in class	Total score	Scores for individual test items										
			1 or 2	3	4	5 or 6	7 or 8	9 or 10	11 or 12	13	14 or 15	16 or 17	
1	32	-3	1		1	1	1				1	2	
2	38	-2	1			2	1	2	2	2	2	2	
3	16	-2			2								
4	36	-7			1			1			3	4	
5	31	-5	4		1	3	2	1	1	1	3	5	
6	38	-27	1		1	7	1		7		17	11	
7	28	-3		1		1			2		2	3	
8	36	+7		2			1		4				
9	32	-4				2	1		5		8		
10	29	-2					1		1	3		1	
11	29	+5	2	1	2		8	3	1		1	7	
12	31	-10			3	2	2			4		3	
13	32	-2					1				3		
14	24	-2		1			2				5		
15	30	+3	1			1	2	1					
16	35	-6			1	1					2	2	
17	29	-25		1	1	6		1		11	5	4	
18	30	0	1			1	1	1	2	2	2		
19	12	-8				1	1	1		1	2	6	
20	31	+7	1	1		3	2	5	1				
21	20	-13			1	5	1	1			8	1	
22	31	-27			10	1					15	1	
23	27	0	1	1	1	1		3	1		2	2	
24	30	-2		2		2		1		1	2		
25	35	0											
26	34	+10	3	2		1	1	3	5			3	
27	16	-8		1	1	1			1		6	2	
28	25	-7			3				1			5	
29	26	-5			1	1			1	1	2	1	
30	33	-9			3		1			1	6		
31	26	-9	2		11	2	2	2			1	1	
32	34	-1			1	1	1	2		1		1	
33	37	+2			1		3		1			1	
34	22	-3				1	3	1			6		
35	32	+2	2				5		1	2	1	3	
36	42	-11			1					1	7	2	
37	23	-3			2			1			1	1	
38	38	-3			1	2	1	1		2			

Controls for P.H. at Ordinary Day School

SOCIAL DISCRIMINATION QUESTIONNAIRE

Child No	No of children in class	Total score	Scores for individual test items										
			1 or 2	3	4	5 or 6	7 or 8	9 or 10	11 or 12	13	14 or 15	16 or 17	
1	32	+ 4	2	1		1	1	1	3			3	
2	38	+ 14	3	1			2	6	3		1		
3	16	+ 4	1			2		1	4				
4	36	+ 7	3	1	1	2	3	5	2		3	1	
5	31	+ 10	3	1		1	6	2	6		3	4	
6	38	- 3		1		1	1	2	1		4	3	
7	28	+ 2	1		1	4	5	1	1	1			
8	36	- 1	5	1		9		3	3		4		
9	32	0	1			2			2				
10	29	- 8			4		2				1	5	
11	29	+ 4	1	2				2	1		2		
12	31	+ 15	4	1		1	5	5	4		2	1	
13	32	+ 2					2						
14	24	+ 7	2		1		2	1	7	1	1	2	
15	30	+ 2	6	2	3	7	1	6			1	2	
16	35	+ 2	1		1	5	1	4	4		1	1	
17	29	- 2.1			3	4	1			1	6	8	
18	30	+ 31	19				1	9	3			1	
19	12	+ 11	1	4		1	4	7	2	2	4		
20	31	+ 27	8	2	2		8	8	4			1	
21	20	0	1	1		3	1	1	2		3		
22	31	+ 33	7	2	1		18	5	2				
23	27	+ 14	12	1	3	1	2	2	3		1	1	
24	30	+ 7		1			1	1	4				
25	35	- 5	2	1		3	1	2		5	1	2	
26	34	- 3	2		2		2	1	1		1	6	
27	16	+ 5	1	1	1		1	2	2		1		
28	25	+ 3	6	1	1	7	1	5	1		3		
29	26	+ 8	4	1		1		2	2				
30	33	- 11			1	1	1	1		2		9	
31	26	+ 15	4				2	4	5				
32	34	+ 29	5		1	1	6	10	9			1	
33	37	- 13				5				5	1	2	
34	22	+ 7		1			1	6	1		2		
35	32	+ 10	1	2		1	1	3	4				
36	42	- 1	1						1	1	2		
37	23	+ 21	7				3	5	8			2	
38	38	+ 13	3				1	1	8				

P.H. at Ordinary Day School

CALIFORNIA TEST OF PERSONALITY (raw scores)

Child No	1A	1B	1C	1D	1E	1F	Emotional adjustment	2A	2B	2C	2D	2E	2F	Social adjustment	Total adjustment					
1	9	10½	7½	12	4½	7½	51	10½	10½	6	10½	7½	9	54	105					
2	9	7½	10½	9	10½	7½	54	10½	12	10½	12	12	10½	67½	121½					
3	7½	7½	7½	7½	12	9	51	6	9	7½	9	9	10½	51	102					
4	12	12	12	12	12	10½	70½	4½	12	12	12	12	9	61½	132					
5	10½	9	12	10½	6	9	57	6	10½	9	9	12	10½	57	114					
6	7	3	7	6	3	4	30	9	7	5	7	4	9	41	71					
7	7	9	9	11	9	4	49	12	10	8	9	9	9	57	106					
8	7	10	9	12	7	11	56	9	9	10	12	9	11	60	116					
9	8	7	5	7	1	0	28	6	8	0	3	4	8	29	57					
10	5	7	6	7	4	1	30	7	9	1	4	5	7	33	63					
11	5	9	12	10	3	3	42	6	8	1	8	5	8	36	78					
12	5	7	7	5	6	5	35	11	6	6	6	7	7	43	78					
13	5	10	9	11	12	7	54	6	8	5	7	3	8	37	91					
14	11	12	12	12	12	12	71	12	12	11	12	12	12	71	142					
15	7	11	12	12	10	12	64	10	9	10	12	10	10	61	125					
16	5	7	4	8	4	9	37	10	11	8	9	11	9	58	95					
17	5	6	10	6	7	0	34	8	8	0	3	4	8	31	65					
18	12	12	12	12	12	10½	70½	10½	9	9	10½	10½	10½	60	130½					
19	4½	12	12	12	9	9	58½	7½	7½	9	12	9	7½	52½	111					
20	6	7½	9	9	0	9	40½	7½	7½	6	7½	9	9	46½	87					
21	5	1	6	6	3	3	24	4	4	4	7	3	6	28	52					
22	10½	7½	9	10½	10½	10½	58½	9	7½	9	10½	7½	12	55½	114					
23	9	10½	6	7½	4½	6	43½	6	6	4½	4½	9	7½	37½	81					
24	10½	10½	10½	12	10½	9	63	10½	12	9	10½	10½	10½	63	126					
25	9	10	9	10	8	7	53	12	11	4	8	9	7	51	104					
26	7	11	11	10	10	7	56	8	8	7	11	10	9	53	109					
27	7	10	11	9	11	9	57	11	8	10	10	9	11	59	116					
28	9	11	5	7	0	0	32	6	8	0	3	4	8	29	61					
29	9	9	4	10	6	2	40	10	6	10	8	6	11	51	91					
30	6	5	3	5	6	6	31	10	8	6	4	5	6	39	70					
31	7	7	6	10	9	4	43	12	9	9	11	11	9	61	104					
32	9	11	10	12	12	7	61	7	9	6	9	7	6	44	105					
33	8	7	11	11	10	12	59	8	7	8	11	5	8	47	106					
34	3	7	9	10	8	11	48	8	8	7	10	7	7	47	95					
35	7	11	10	10	7	7	52	7	10	8	10	9	10	54	106					
36	4	3	7	5	3	8	30	9	6	5	11	2	8	41	71					
37	5	9	9	12	10	7	52	9	9	7	8	7	10	50	102					
38	4	4	8	7	3	7	33	9	8	4	7	5	8	41	74					

P.H. at Special Day school

CALIFORNIA TEST OF PERSONALITY (raw scores)

Child No	1A	1B	1C	1D	1E	1F	Emotional adjustment	2A	2B	2C	2D	2E	2F	Social adjustment	Total adjustment					
1	6	9	7½	10½	7½	6	46½	9	9	9	7½	7½	9	51	97½					
2	7½	12	10½	12	7½	4½	54	12	9	10½	12	12	10½	66	120					
3	6	7½	7½	10½	3	6	40½	9	9	7½	4½	10½	7½	48	88½					
4	4½	4½	6	9	4½	6	34½	7½	12	4½	6	6	9	45	79½					
5	7½	10½	7½	6	9	6	46½	6	7½	12	7½	6	9	48	94½					
6	7	7	6	10	6	7	43	9	9	6	10	7	8	49	92					
7	7	9	10	9	9	9	53	11	10	12	9	11	10	63	116					
8	7	12	12	12	11	6	60	10	12	11	12	10	11	66	126					
9	8	11	10	9	12	12	62	9	7	12	11	11	8	58	120					
10	6	6	5	6	7	12	42	10	10	10	10	12	9	61	103					
11	7	6	10	10	6	5	44	9	9	8	10	8	9	53	97					
12	4	5	10	9	5	5	38	11	9	8	5	9	9	51	89					
13	8	11	12	7	8	8	54	9	8	9	11	10	11	58	112					
14	6	8	9	10	9	10	52	11	7	8	11	9	5	51	103					
15	6	11	10	10	11	5	53	9	9	8	12	11	7	56	109					
16	7	11	10	10	8	9	55	9	10	8	12	9	7	55	110					
17	6	8	7	11	5	7	44	9	9	6	9	5	10	48	92					
18	4½	9	9	10½	12	10½	55½	6	12	12	10½	7½	7½	55½	74					
19	10½	9	9	10½	10½	9	58½	12	10½	10½	6	7½	9	55½	114					
20	3	10½	9	9	4½	1½	37½	9	9	6	9	6	7½	46½	84					
21	4½	7½	9	4½	3	6	34½	9	3	3	9	6	4½	34½	69					
22	7	9	9	10	9	6	50	8	9	7	11	9	10	54	104					
23	7½	10½	10½	10½	7½	4½	51	9	7½	10½	10½	12	12	61½	112½					
24	6	7½	7½	9	10½	7½	48	9	6	9	10½	9	7½	51	99					
25	8	11	10	12	11	11	63	11	8	9	12	10	9	59	122					
26	6	9	8	11	9	7	50	9	11	6	11	10	10	57	107					
27	8	8	11	9	12	7	55	7	9	12	12	11	9	60	115					
28	6	4	8	9	7	6	40	8	8	8	2	5	7	38	78					
29	8	11	10	9	9	6	53	9	9	6	7	6	12	49	102					
30	5	11	9	10	9	8	52	10	8	9	9	9	9	54	106					
31	6	9	9	7	8	6	45	9	7	7	10	7	10	50	95					
32	8	9	8	10	10	10	55	10	8	12	9	10	10	59	114					
33	7	9	11	11	12	12	62	9	11	12	11	11	8	62	124					
34	6	9	8	7	6	10	46	6	8	7	9	8	9	47	93					
35	3	8	10	10	8	6	45	8	8	6	9	9	11	51	96					
36	5	9	9	11	8	7	49	9	10	8	9	9	9	54	103					
37	6	8	7	8	4	1	34	9	8	9	7	5	9	47	81					
38	11	11	11	12	12	8	65	10	9	11	12	9	10	61	126					

P.H. at Special Residential School

CALIFORNIA TEST OF PERSONALITY (raw scores)

Child No	1A	1B	1C	1D	1E	1F	Emotional Adjustment	2A	2B	2C	2D	2E	2F	Social Adjustment	Total Adjustment					
1	7½	7½	9	10½	6	7½	48	10½	9	6	6	10½	6	51	99					
2	9	9	6	9	7½	9	49½	12	9	12	9	10½	7½	60	109½					
3	10½	10½	4½	10½	6	4½	46½	10½	9	10½	4½	7½	9	51	97½					
4	12	9	12	7½	4½	9	45	10½	6	6	9	6	4½	42	87					
5	3	10½	12	9	3	0	37½	10½	7½	1½	10½	7½	9	46½	84					
6	7	8	9	10	6	2	42	8	10	7	10	8	11	54	96					
7	8	11	11	11	11	9	61	11	8	7	10	9	9	54	115					
8	6	7	9	11	4	6	43	8	6	9	11	5	10	49	92					
9	6	9	10	8	8	7	48	9	7	7	8	10	9	50	98					
10	7	7	6	7	1	1	29	9	8	10	10	4	9	50	79					
11	11	10	10	9	5	3	48	9	8	7	8	6	12	50	98					
12	6	8	3	7	1	9	34	9	7	7	4	1	8	36	70					
13	11	6	8	10	8	2	45	8	7	11	9	9	10	54	99					
14	6	9	9	10	5	10	49	7	7	7	10	9	12	52	101					
15	7	9	10	9	5	8	48	11	9	8	12	10	11	61	109					
16	7	10	6	10	3	8	44	11	9	9	12	5	10	56	100					
17	6	11	8	12	5	7	49	12	11	8	12	7	10	60	109					
18	7½	6	10½	9	9	10½	52½	7½	9	7½	7½	7½	9	48	100½					
19	7½	7½	9	4½	7½	4½	40½	6	7½	6	7½	7½	9	43½	84					
20	6	3	7½	6	6	6	34½	6	9	9	7½	7½	6	45	79½					
21	6	9	6	10½	9	12	52½	6	12	9	10½	10½	10½	58½	111					
22	9	10½	12	10½	10½	12	64½	7½	10½	9	9	10½	9	55½	120					
23	9	12	10½	12	12	10½	66	10½	12	12	12	10½	10½	67½	133½					
24	10½	12	9	12	12	12	67½	9	7½	7½	12	9	10½	55½	123					
25	8	10	7	8	5	7	45	5	7	6	11	6	10	45	100					
26	4	6	11	10	9	12	52	10	11	12	11	9	9	62	114					
27	5	7	7	9	6	6	40	9	5	2	7	5	6	34	74					
28	7	5	6	8	6	5	37	11	8	5	7	6	8	45	82					
29	5	8	11	10	11	6	51	9	8	6	10	9	9	51	102					
30	7	6	12	8	6	7	46	9	7	4	12	3	8	43	89					
31	7	4	9	6	4	3	33	9	7	7	5	6	10	44	77					
32	9	8	5	7	1	3	33	8	8	2	6	4	8	36	69					
33	6	8	7	8	2	7	38	9	8	1	8	4	8	38	76					
34	9	11	12	11	11	11	65	10	8	12	12	10	8	60	125					
35	9	9	10	12	12	12	64	12	11	12	12	12	12	71	135					
36	9	9	10	11	3	5	47	10	9	9	11	8	10	57	104					
37	9	7	11	9	10	10	56	11	8	12	10	8	8	57	113					
38	3	6	7	8	7	7	38	6	8	4	9	7	9	43	81					

Controls for P.H. at Ordinary Day School

CALIFORNIA TEST OF PERSONALITY (raw scores)

Child No.	1A	1B	1C	1D	1E	1F	Emotional adjustment	2A	2B	2C	2D	2E	2F	Social Adjustment	Total Adjustment					
1	9	6	3	4½	4½	1½	28½	7½	10½	6	9	4½	7½	45	73½					
2	10½	10½	10½	12	4½	4½	52½	10½	10½	4½	9	7½	6	48	101½					
3	9	6	9	10½	12	9	55½	6	12	10½	12	9	12	61½	117					
4	10½	9	10½	10½	6	4½	54	7½	10½	7½	6	10½	9	51	105					
5	9	7½	0	7½	7½	4½	36	12	12	7½	7½	9	7½	55½	91½					
6	6	7	8	9	5	1	36	10	9	7	8	10	10	54	90					
7	5	7	9	10	10	7	48	11	10	8	11	9	10	59	107					
8	3	10	2	7	0	3	25	7	8	2	4	4	8	33	58					
9	9	10½	10½	7½	3	1½	42	9	7½	3	9	4½	7½	40½	82½					
10	4	8	11	8	3	4	38	4	7	2	8	4	10	35	73					
11	8	9	6	7	4	5	39	8	4	3	5	4	9	31	70					
12	7	7	9	12	8	6	49	8	10	5	10	7	7	47	96					
13	8	8	10	10	10	8	54	6	11	8	10	11	11	57	111					
14	10	12	11	11	10	9	63	12	9	11	11	10	12	65	128					
15	9	8	10	11	11	10	59	12	11	10	12	12	10	67	126					
16	7	10	11	12	12	4	56	10	8	6	12	11	11	58	114					
17	8	10	7	11	4	2	42	5	8	4	6	5	8	36	78					
18	7½	9	6	10½	9	9	51	10½	10½	10½	12	7½	9	60	111					
19	9	9	7½	9	9	10½	54	10½	10½	12	10½	12	12	67½	121½					
20	10½	10½	9	10½	7½	7½	55½	12	9	4½	9	9	7½	51	106½					
21	7½	7½	9	7½	6	9	46½	7½	9	6	7½	7½	12	49½	96					
22	9	10½	9	9	7½	6	51	10½	7½	1½	9	10½	7½	46½	97½					
23	9	12	12	12	12	9	66	11	12	12	12	12	11	70	136					
24	9	9	7½	10½	9	9	54	12	9	9	10½	12	12	64½	118½					
25	8	9	11	11	3	10	52	10	10	7	9	8	8	52	104					
26	11	11	12	11	12	6	63	11	8	9	12	11	8	59	122					
27	9	8	9	12	10	11	59	11	9	10	11	11	11	63	122					
28	3	7	11	9	4	10	44	10	5	11	9	7	6	48	92					
29	4	9	9	11	8	6	47	10	7	7	11	5	11	51	98					
30	6	6	10	10	8	8	48	11	9	9	12	8	10	59	107					
31	7	12	12	11	11	11	64	7	8	8	12	9	9	53	117					
32	6	10	11	12	8	9	56	11	10	5	11	8	9	54	110					
33	4	2	11	8	8	8	41	9	6	4	6	3	7	35	76					
34	6	9	10	11	8	5	49	9	9	4	10	9	9	50	99					
35	5	6	12	11	10	9	53	10	7	10	10	9	9	55	108					
36	8	5	10	10	10	11	54	9	5	9	9	5	10	47	101					
37	5	10	9	12	4	5	45	8	6	2	11	6	9	42	87					
38	10	9	10	9	4	6	48	9	8	3	12	6	10	48	96					

Controls for P.H. at Special Day School

CALIFORNIA TEST OF PERSONALITY (raw scores)

Child No	1A	1B	1C	1D	1E	1F	Emotional adjustment	2A	2B	2C	2D	2E	2F	Social adjustment	Total adjustment					
1	6	12	10½	7½	4½	7½	48	9	9	4½	10½	9	7½	49½	97½					
2	7½	12	10½	12	10½	10½	63	10½	10½	12	12	12	12	69	132					
3	10½	10½	9	9	7½	7½	54	10½	9	10½	12	12	6	60	114					
4	10½	12	9	12	12	7½	63	9	10½	12	10½	12	9	63	126					
5	6	1½	10½	9	6	6	39	10½	7½	4½	10½	7½	6	46½	85½					
6	7	5	6	6	4	9	37	9	6	9	8	9	9	50	87					
7	7	8	10	8	8	4	45	9	8	7	7	9	7	47	92					
8	6	6	6	7	5	6	36	11	6	4	5	4	8	38	74					
9	6	6	9	7	8	3	39	11	11	10	7	6	9	54	93					
10	5	5	7	8	6	7	38	6	5	3	4	5	9	32	70					
11	6	10	8	8	3	2	37	12	7	6	7	11	8	51	88					
12	6	11	11	12	7	6	53	10	8	9	12	11	10	60	113					
13	9	8	11	10	10	10	58	10	10	4	12	7	9	52	110					
14	8	11	12	11	7	6	55	11	10	9	12	10	10	62	117					
15	5	11	10	12	9	5	52	12	9	10	11	10	10	62	114					
16	8	9	11	10	9	7	54	11	9	12	12	12	10	66	120					
17	5	9	8	10	11	7	50	9	8	8	10	10	10	55	105					
18	9	10½	9	10½	3	6	48	9	6	3	9	7½	7½	42	90					
19	7½	3	9	10½	4½	4½	39	9	1½	4½	9	3	9	36	75					
20	4½	12	10½	12	12	6	57	9	9	9	6	12	10½	55½	112½					
21	9	12	10½	12	10½	7½	61½	12	10½	10½	12	12	10½	67½	129					
22	9	12	10½	12	12	4½	60	9	7½	10½	10½	12	9	58½	118½					
23	6	6	9	10½	3	9	43½	10½	6	6	10½	10½	7½	51	94½					
24	7½	10½	9	10½	9	9	55½	9	10½	3	10½	10½	10½	54	109½					
25	8	11	11	11	12	10	63	7	8	10	8	9	5	47	110					
26	6	7	12	4	5	3	37	7	4	2	7	1	4	25	62					
27	7	7	11	11	11	10	57	8	8	11	9	9	8	53	110					
28	8	12	10	12	10	10	62	11	10	12	11	11	11	66	128					
29	9	8	11	9	11	6	54	10	8	6	10	9	11	54	108					
30	9	7	8	10	7	9	50	10	8	4	6	7	9	44	94					
31	7	4	11	10	5	12	49	11	6	8	10	7	7	49	98					
32	6	8	9	8	3	5	39	11	7	4	8	4	10	44	83					
33	9	8	10	9	5	8	49	10	11	6	7	6	11	51	100					
34	6	8	5	6	0	1	26	7	8	3	4	4	9	35	61					
35	6	9	11	12	5	4	47	7	7	5	9	7	5	40	87					
36	5	6	8	8	5	9	41	7	7	5	11	6	11	47	88					
37	4	10	9	11	9	10	53	10	4	6	11	8	8	47	100					
38	5	6	8	8	7	6	40	9	7	8	5	5	5	39	79					

Controls for P.H. at
Special Residential School CALIFORNIA TEST OF PERSONALITY (raw scores)

Child No	1A	1B	1C	1D	1E	1F	Emotional adjustment	2A	2B	2C	2D	2E	2F	Social adjustment	Total adjustment					
1	10½	9	12	12	10½	7½	61½	9	10½	12	10½	10½	12	64½	125					
2	7½	10½	9	10½	9	9	54	12	10½	12	12	10½	7½	64½	118½					
3	1½	4½	9	4½	3	7½	30	12	9	7½	6	3	1½	39	69					
4	7½	4½	9	6	1½	7½	36	10½	10½	9	10½	7½	10½	58½	94½					
5	7½	6	10½	9	6	4½	43½	9	7½	10½	12	7½	10½	57	100½					
6	11	10	11	12	12	11	67	10	10	11	12	11	12	66	133					
7	9	8	9	10	6	8	50	12	9	9	12	7	10	59	109					
8	6	10	9	10	9	8	52	12	10	10	12	8	10	62	114					
9	7	6	9	8	2	3	35	10	6	4	8	4	9	41	76					
10	6	3	11	8	2	3	33	10	8	4	9	3	11	45	78					
11	7	5	11	7	3	3	36	11	8	6	9	2	11	47	83					
12	5	5	11	10	11	12	54	12	9	9	10	7	9	56	110					
13	8	12	12	10	3	8	53	12	8	8	12	10	12	62	115					
14	6	8	7	10	3	5	39	9	6	4	10	3	8	40	79					
15	9	11	12	11	9	11	63	11	8	10	12	10	9	60	123					
16	8	8	11	12	11	8	58	11	9	7	10	9	10	56	114					
17	6	8	11	10	7	8	50	11	9	7	12	10	9	58	108					
18	6	10½	9	10½	9	9	54	9	12	10½	12	9	9	61½	115½					
19	9	10½	10½	12	10½	12	64½	10½	12	12	12	12	10½	69	133½					
20	4½	9	12	12	12	7½	57	6	9	7½	12	9	9	52½	109½					
21	7½	9	10½	12	12	12	63	9	12	10½	12	10½	10½	64½	127½					
22	10½	10½	10½	10½	12	10½	64½	9	10½	10½	9	10½	9	58½	123					
23	9	9	9	10½	12	10½	60	7½	10½	12	12	7½	10½	60	120					
24	7½	9	7½	10½	10½	6	51	7½	6	3	4½	7½	7½	36	87					
25	8	12	12	12	9	6	59	10	10	9	12	9	11	61	120					
26	5	8	9	9	9	11	51	12	6	8	11	10	7	54	105					
27	6	8	9	12	10	10	55	12	6	11	9	11	9	58	113					
28	10	9	11	12	5	12	59	10	8	8	11	8	10	55	114					
29	7	6	7	5	2	4	31	9	7	3	10	4	11	44	75					
30	8	9	11	11	11	12	62	8	9	6	10	10	10	53	115					
31	9	9	6	12	11	10	57	12	11	10	11	11	12	67	124					
32	9	9	9	9	2	3	41	10	9	6	10	8	10	53	94					
33	7	6	9	6	2	12	42	10	4	3	6	3	10	36	78					
34	6	4	9	10	5	4	38	9	7	5	4	6	8	39	77					
35	4	8	11	11	8	8	50	10	3	5	12	8	10	48	98					
36	7	8	11	11	4	4	45	8	7	6	10	5	9	45	90					
37	10	11	12	12	11	11	67	10	10	12	12	10	11	65	132					
38	9	10	9	12	6	9	55	10	4	5	12	10	10	51	106					

P.H. at:

JUNIOR EYSENCK PERSONALITY INVENTORY

Child No	Ordinary Day School			Special Day School			Special Residential					Controls for O.D.S.			Controls for S.D.S.			Controls for S.R.S.		
	Extraversion	Neuroticism	Lie scale	Extraversion	Neuroticism	Lie Scale	Extraversion	Neuroticism	Lie scale			Extraversion	Neuroticism	Lie scale	Extraversion	Neuroticism	Lie scale	Extraversion	Neuroticism	Lie scale
1	17	17	3	19	18	2	12	16	4			11	13	12	14	16	9	23	11	4
2	18	1	7	19	21	7	18	11	8			18	15	5	19	10	2	14	17	6
3	15	10	3	15	16	8	12	16	2			18	11	4	18	3	10	11	17	6
4	21	1	10	21	21	5	15	10	8			22	11	9	21	10	7	12	8	9
5	16	6	9	10	10	9	17	21	7			11	11	10	16	18	4	9	22	3
6	15	23	3	13	14	6	21	16	12			19	13	6	18	12	7	16	7	3
7	16	14	8	17	16	11	14	15	4			8	15	3	18	14	6	18	17	1
8	23	16	10	23	7	5	18	20	4			14	22	2	17	19	1	20	14	2
9	20	19	10	14	7	9	16	16	7			19	20	4	17	15	4	18	23	1
10	16	24	5	14	10	10	16	12	11			21	18	3	13	21	1	19	23	4
11	17	16	0	16	17	9	20	19	4			16	22	2	22	13	3	18	12	10
12	11	11	5	16	9	8	16	17	6			15	20	2	19	13	1	11	11	1
13	16	11	4	16	7	7	17	16	11			21	12	4	16	8	5	18	11	4
14	18	4	4	18	8	7	19	14	2			23	17	1	18	19	1	21	19	2
15	23	12	0	10	9	6	21	18	5			21	10	1	16	11	7	23	9	3
16	16	12	4	18	13	1	23	13	7			19	9	4	10	15	1	21	11	1
17	20	14	12	16	11	10	18	11	7			17	15	10	17	11	2	12	6	6
18	22	1	6	18	8	2	19	7	11			19	8	7	16	17	3	14	16	6
19	16	4	11	18	11	11	12	8	11			16	12	6	17	10	2	19	6	7
20	19	14	6	16	15	5	18	15	5			16	9	6	16	14	6	19	8	3
21	21	15	6	14	11	2	15	8	10			14	11	5	20	7	9	22	9	3
22	19	6	2	21	12	3	16	3	11			22	16	3	19	15	4	21	8	5
23	15	18	3	21	9	6	17	11	4			20	9	2	17	12	3	18	9	5
24	22	7	4	16	13	1	18	7	5			18	12	0	20	14	3	17	21	5
25	23	9	2	19	8	6	21	15	5			21	14	4	24	8	4	18	10	2
26	20	9	2	11	12	10	14	16	5			22	11	1	22	8	4	18	13	1
27	17	10	6	6	10	4	13	12	3			19	4	8	22	5	0	16	9	2
28	19	23	3	13	14	10	23	18	6			18	17	2	20	2	11	20	10	6
29	18	15	0	16	16	4	18	12	3			21	12	4	22	13	2	11	22	1
30	8	16	7	20	5	5	20	10	5			12	13	3	21	13	4	20	18	2
31	14	11	8	16	16	8	14	22	8			20	5	6	14	18	1	17	12	1
32	16	20	0	14	9	11	17	15	11			22	10	0	18	22	1	20	17	5
33	18	11	6	17	4	8	14	16	6			10	16	2	20	15	0	10	17	3
34	17	12	5	22	6	6	16	9	4			18	15	6	20	23	3	22	15	0
35	22	14	1	20	16	1	21	11	3			18	7	4	22	14	5	14	17	1
36	13	18	1	16	14	11	16	19	6			19	8	0	16	11	5	19	18	4
37	15	19	1	17	14	3	19	2	8			14	9	2	12	12	2	21	9	2
38	10	20	0	22	13	5	13	14	5			20	18	2	14	19	1	20	12	4

BARKER LUNN'S ATTITUDE TO SCHOOL SCALES

Child No	P.H. at Ordinary Day School										Controls for P.H. at Ordinary Day School									
	A	B	C	D	E	F	G	H	I	J	A	B	C	D	E	F	G	H	I	J
1	6	5	7	13	4	4	3	5	4	10	6	5	10	13	4	5	2	1	2	10
2	5	6	9	14	4	5	5	4	3	14	5	5	9	15	5	3	5	4	3	12
3	4	3	8	14	3	5	5	4	3	10	2	3	7	15	5	2	2	3	1	10
4	6	5	8	15	5	5	3	4	4	12	4	4	9	14	4	4	3	3	3	9
5	6	3	8	12	6	3	5	2	3	14	6	4	8	12	3	4	3	2	2	12
6	1	0	6	7	3	3	0	1	2	2	6	4	9	16	6	3	4	4	5	13
7	5	4	6	14	4	4	1	3	1	9	4	2	7	12	5	4	1	3	3	8
8	6	4	9	13	3	5	3	3	3	10	1	4	10	14	3	3	0	0	4	7
9	2	3	8	12	3	4	5	2	4	12	3	3	8	13	3	4	4	2	1	10
10	3	2	6	12	3	2	4	1	3	6	2	3	7	13	3	4	1	2	2	8
11	2	3	7	8	3	3	3	3	1	11	3	3	9	14	4	3	1	5	1	6
12	4	1	3	15	3	5	2	2	0	4	4	4	10	14	3	3	1	4	2	7
13	3	3	4	15	3	2	1	3	3	11	5	4	8	14	3	3	2	6	1	12
14	5	6	9	14	4	4	4	3	5	16	4	5	7	16	4	2	2	2	3	10
15	4	3	3	13	2	1	1	3	4	9	4	3	5	12	3	3	2	3	3	8
16	5	3	8	15	3	3	3	2	3	7	3	3	9	11	5	2	3	5	4	8
17	5	3	8	12	4	3	6	2	2	11	3	4	8	14	2	4	3	4	3	16
18	0	1	6	5	3	0	0	5	5	13	1	4	9	13	3	3	2	2	3	9
19	4	3	5	11	4	5	2	2	5	8	6	3	7	15	1	3	3	2	2	7
20	6	3	8	14	2	3	1	1	2	9	6	6	9	15	2	5	4	5	1	15
21	5	4	8	15	4	5	2	2	3	10	2	3	6	13	2	4	2	3	1	8
22	5	4	10	16	4	1	4	2	3	14	6	4	8	14	4	3	3	5	3	9
23	3	3	7	14	4	4	4	4	2	10	4	4	9	12	2	2	2	5	4	12
24	5	4	10	15	4	3	6	4	5	13	5	4	9	15	3	3	4	2	5	11
25	1	2	4	6	1	1	1	2	5	15	3	3	6	11	5	3	1	6	5	13
26	5	3	6	14	3	1	1	3	4	11	3	4	8	15	4	3	4	2	4	13
27	4	3	9	16	2	4	4	2	3	9	3	3	8	12	2	3	4	2	3	8
28	2	4	4	8	2	1	2	1	1	9	2	1	7	11	3	3	2	4	3	7
29	5	4	7	15	5	3	4	2	5	7	5	2	8	16	4	3	2	4	2	9
30	5	2	6	13	4	4	2	3	2	4	6	6	5	13	4	3	1	5	3	10
31	6	5	8	12	3	5	6	2	5	13	5	5	10	15	2	5	5	4	4	15
32	3	3	10	13	4	3	3	2	4	9	3	3	5	12	3	2	1	5	3	12
33	4	5	8	16	4	5	3	5	3	15	3	2	5	13	3	3	2	2	1	6
34	3	4	7	14	4	3	4	2	2	9	0	0	7	13	1	3	1	5	3	10
35	4	5	7	15	4	2	5	4	4	9	3	4	8	8	3	5	2	2	4	10
36	1	1	5	12	3	1	2	4	2	2	1	0	8	6	4	3	1	1	1	8
37	2	2	7	14	2	1	1	1	2	8	0	2	8	1	2	1	1	2	1	8
38	3	3	4	14	3	3	1	2	2	6	4	3	7	14	3	3	4	3	3	9

BARKER LUNN'S ATTITUDE TO SCHOOL SCALES

Child No	P.H. at Special Day School										Controls for P.H. at Special Day School									
	A	B	C	D	E	F	G	H	I	J	A	B	C	D	E	F	G	H	I	J
1	1	3	1	9	5	4	1	4	3	11	5	4	10	14	4	5	4	1	1	6
2	6	6	10	12	6	5	5	3	4	14	5	3	10	14	4	2	6	5	2	12
3	1	0	8	8	4	4	5	1	3	12	4	4	6	14	5	4	2	2	1	11
4	6	4	5	13	3	2	5	3	3	10	6	4	10	14	4	4	5	5	4	9
5	6	5	8	14	3	4	4	6	3	13	2	1	5	14	3	2	3	3	1	6
6	5	4	8	14	4	4	4	3	3	10	2	1	7	12	2	3	1	2	1	12
7	6	4	6	15	5	5	5	4	2	13	4	3	7	12	3	3	2	4	2	8
8	6	3	10	13	5	5	5	2	5	11	5	3	8	12	1	4	4	4	3	10
9	2	1	6	7	5	4	3	2	1	8	6	5	7	12	2	4	3	5	3	10
10	4	3	6	13	4	3	1	3	2	8	4	4	8	16	4	3	1	2	2	9
11	5	7	9	15	4	4	5	1	3	12	3	2	7	13	5	2	2	4	3	12
12	6	5	9	15	5	5	5	4	3	9	4	5	8	16	5	2	5	0	4	9
13	5	5	6	16	6	5	6	3	3	9	4	4	8	4	4	3	1	3	0	13
14	6	3	9	15	4	3	4	4	5	10	3	2	9	14	4	2	2	1	3	8
15	5	5	9	13	4	5	2	3	2	11	4	3	7	13	4	3	2	5	5	10
16	5	4	9	15	5	4	3	4	5	15	5	5	10	14	4	5	6	2	3	15
17	4	4	8	15	4	3	4	2	1	13	3	5	10	15	4	3	1	3	2	9
18	1	2	5	13	4	4	2	6	1	9	3	1	4	9	1	3	5	4	3	16
19	4	6	8	15	5	4	5	5	3	16	1	0	4	6	1	2	1	2	3	8
20	3	4	6	12	4	3	5	3	5	11	2	1	6	10	4	3	3	0	5	9
21	4	3	8	9	4	5	6	5	4	17	2	4	9	14	6	4	4	5	4	17
22	4	5	9	12	4	3	2	4	4	9	5	5	9	14	4	5	6	3	4	15
23	3	3	10	9	5	2	1	3	4	10	4	3	9	10	4	5	6	4	3	9
24	5	3	8	15	5	4	3	3	4	10	6	5	10	15	5	4	5	4	4	13
25	6	4	8	16	5	3	5	2	5	13	4	3	9	11	5	4	2	4	3	12
26	4	3	4	11	4	2	1	3	1	9	3	4	9	6	2	2	0	3	0	9
27	3	2	3	12	5	1	3	3	4	10	1	2	8	13	3	2	1	5	4	17
28	4	3	8	16	4	3	5	0	4	10	5	6	10	14	4	5	3	4	5	15
29	2	2	5	10	3	3	1	3	4	8	6	4	9	9	3	4	1	5	2	17
30	5	5	10	14	4	5	5	4	3	7	6	4	9	13	3	4	5	5	2	17
31	3	1	8	16	4	4	2	1	4	7	1	0	4	9	3	2	2	2	4	11
32	4	3	8	14	4	3	4	5	3	16	1	3	6	11	1	3	2	2	5	7
33	6	6	9	16	4	5	4	5	5	11	3	2	6	15	3	3	1	2	3	9
34	2	2	4	1	4	3	0	4	3	11	2	2	5	6	2	3	1	3	3	9
35	2	4	6	13	2	3	3	3	3	8	1	3	8	15	2	4	1	3	4	9
36	4	5	8	8	1	2	5	3	1	12	3	5	8	16	5	5	6	3	2	10
37	3	1	7	16	4	4	4	2	5	9	4	1	7	14	4	1	3	2	3	11
38	2	0	7	15	5	4	3	2	2	8	5	3	7	13	1	2	1	2	2	6

BARKER LUNN'S ATTITUDE TO SCHOOL SCALES

Child No	P.H. at Special Residential School										Controls for P.H. at Special Residential School									
	A	B	C	D	E	F	G	H	I	J	A	B	C	D	E	F	G	H	I	J
1	6	5	10	16	5	4	6	1	4	10	6	4	9	15	5	2	5	3	4	11
2	3	4	8	15	4	3	3	3	4	11	5	2	7	10	4	3	2	0	5	8
3	6	5	10	12	3	4	3	5	3	12	4	2	7	14	5	5	1	3	2	6
4	3	1	2	9	2	3	1	1	1	11	2	2	10	13	3	4	2	2	2	4
5	3	2	9	8	3	4	2	1	5	7	6	5	7	13	5	4	3	2	2	8
6	6	4	10	9	2	4	2	0	1	5	5	4	10	11	4	4	4	4	4	14
7	4	4	8	12	5	4	3	3	1	9	3	4	8	12	4	3	2	0	2	5
8	3	4	6	2	3	3	2	0	2	6	4	4	10	16	4	3	3	1	4	13
9	6	5	8	15	4	3	4	4	6	11	5	4	6	3	3	2	2	3	3	10
10	4	4	8	14	5	4	3	0	2	7	4	2	7	10	4	2	2	1	2	3
11	3	4	9	14	4	3	3	1	2	10	4	4	10	8	5	5	3	3	3	2
12	4	2	8	15	4	5	2	1	3	10	2	2	8	9	3	2	0	1	1	6
13	2	0	6	8	3	5	2	2	3	7	6	5	8	14	4	4	5	2	3	11
14	0	4	9	6	5	3	2	1	2	9	2	3	9	15	3	2	3	1	3	8
15	5	5	8	16	5	3	4	4	4	9	4	4	8	11	4	1	4	2	2	13
16	3	4	7	8	2	3	2	3	4	14	4	3	9	13	6	3	2	4	3	9
17	2	3	8	15	3	3	6	0	3	8	6	5	9	15	5	3	3	2	5	8
18	4	5	10	14	4	5	2	4	4	12	1	3	8	9	2	3	1	3	3	12
19	3	1	4	10	3	4	3	4	4	4	4	4	9	13	4	3	2	2	3	12
20	5	4	6	16	3	4	1	4	2	11	6	5	7	7	3	1	2	4	1	10
21	5	3	8	16	5	4	4	3	4	6	4	4	10	11	4	4	2	5	3	13
22	5	4	8	14	6	5	3	1	1	7	5	4	8	15	2	1	3	4	2	15
23	4	4	10	13	4	3	5	5	5	13	2	1	7	9	1	3	2	5	2	11
24	4	4	8	11	4	5	7	3	4	13	3	3	8	9	3	2	3	3	1	9
25	2	2	7	13	2	3	1	2	3	11	3	1	7	12	1	2	1	2	4	8
26	5	3	9	8	1	5	3	4	4	12	3	3	9	12	3	4	3	3	3	15
27	6	4	6	9	4	2	3	4	1	11	3	3	6	7	5	3	2	4	3	11
28	5	5	8	13	5	5	6	2	5	18	5	3	8	14	3	4	6	1	4	14
29	3	4	6	12	3	3	3	5	3	8	3	1	7	10	1	2	3	2	1	7
30	6	6	8	15	4	5	4	4	3	17	6	5	10	13	5	3	4	2	5	15
31	1	0	6	9	3	4	0	0	4	11	5	3	9	13	2	2	3	5	3	15
32	2	3	8	16	4	3	3	1	5	11	5	4	5	16	3	5	5	0	3	16
33	1	0	10	7	4	4	1	1	5	7	4	4	10	12	3	5	6	2	1	15
34	1	3	4	11	4	1	3	2	2	4	3	1	5	12	2	0	0	2	4	9
35	4	2	5	14	5	3	3	6	3	9	4	2	8	15	3	2	4	2	4	7
36	3	1	10	7	3	3	2	5	3	9	3	2	10	10	2	3	2	3	3	14
37	6	5	10	8	4	4	5	5	3	18	1	2	6	7	2	3	0	2	4	9
38	6	4	10	16	5	3	5	3	3	14	4	4	9	9	4	2	4	2	4	15

SCHOOL ATTAINMENT (raw score)

Child No	P.H. Children						Controls for P.H. Children						
	Vernon's Graded Word reading Test			WISC Arithmetic Sub-Scale			Vernon's Graded Word reading Test			WISC Arithmetic Sub-Scale			
	OD	SD	SR	OD	SD	SR	OD	SD	SR	OD	SD	SR	
1	30	55	10	8	10	7	53	35	40	8	8	11	
2	57	60	50	8	9	9	50	81	42	12	10	10	
3	79	6	37	9	8	7	43	44	43	9	8	7	
4	63	21	11	11	7	6	69	81	39	11	12	11	
5	35	17	25	7	7	5	19	58	53	7	8	8	
6	56	20	46	9	4	7	56	36	81	9	8	10	
7	38	30	76	8	7	10	49	36	62	9	9	12	
8	55	55	58	12	8	8	75	61	87	11	10	12	
9	47	31	21	4	4	7	51	51	73	7	10	10	
10	7	13	20	7	7	6	45	50	60	7	9	11	
11	45	38	68	9	9	8	78	62	62	13	10	9	
12	33	78	44	7	12	6	45	67	81	9	9	13	
13	43	29	28	8	8	4	40	74	44	12	8	10	
14	68	66	22	14	9	9	104	67	53	12	12	10	
15	94	103	89	12	13	13	70	91	97	10	13	12	
16	89	100	56	9	14	8	70	86	97	11	13	14	
17	17	60	39	8	11	7	21	62	84	8	10	12	
18	51	0	34	12	5	8	54	86	54	12	12	11	
19	55	24	7	8	8	6	48	38	83	9	8	11	
20	43	31	34	9	7	7	78	57	71	9	12	12	
21	97	16	1	11	9	5	43	61	55	12	12	10	
22	56	16	7	11	8	6	58	76	73	11	11	10	
23	100	34	60	14	8	13	89	78	85	16	12	9	
24	74	66	54	12	10	8	66	84	37	12	11	9	
25	55	71	52	14	9	9	81	60	72	12	14	9	
26	86	61	100	13	8	11	82	64	97	14	9	14	
27	81	30	70	10	13	9	31	82	92	13	15	11	
28	45	30	61	9	5	7	34	70	74	9	9	9	
29	55	55	70	8	9	7	71	78	97	11	14	13	
30	67	35	61	7	8	11	50	68	65	9	11	10	
31	67	14	34	11	7	7	68	86	91	12	14	8	
32	62	23	30	7	9	5	74	50	96	11	9	13	
33	47	14	25	9	6	4	41	79	96	9	12	8	
34	71	77	20	9	9	9	69	67	92	9	10	15	
35	84	70	86	14	8	14	86	66	87	12	12	14	
36	80	48	55	13	8	7	40	63	102	8	9	15	
37	83	14	8	10	7	8	73	70	94	9	7	12	
38	59	24	52	11	6	10	87	18	81	12	8	12	

PH at Ordinary Day School

Child No	BRISTOL SOCIAL ADJUSTMENT GUIDE				SHOBEN'S PARENT-ATTITUDE SURVEY								
	Total Raw Score		Teachers' Assessment of child's popularity		Total Score including miscellaneous		Ignoring		Possessive		Dominant		
					MRS	MR	MRS	MR	MRS	MR	MRS	MR	
1	1		1		333	321	58	54	75	86	173	160	
2	2		1		316	297	61	52	83	76	146	148	
3	13		3		315	284	63	51	77	75	148	137	
4	7		1		322	349	58	54	75	91	162	174	
5	2		1		377	375	60	60	100	97	192	193	
6	16		2			344		62		83		171	
7	3		1										
8	3		1		291	294	51	53	73	71	144	148	
9	3		1		395	357	68	62	104	91	197	182	
10	18		3										
11	5		1										
12	9		3		373	383	63	66	92	96	194	198	
13	2		1		343	329	55	58	94	86	162	157	
14	1		1		302	293	52	54	81	79	147	138	
15	1		1										
16	3		1		304	328	56	52	83	80	144	169	
17	12		3										
18	4		1		316	272	55	50	76	69	162	135	
19	16		3		351	367	58	58	90	96	180	186	
20	25		3										
21	27		2										
22	9		1		381	348	64	55	101	95	189	172	
23	14		2										
24	1		1										
25	13		1		354	326	57	59	95	86	174	153	
26	0		1		321	358	56	52	85	94	154	189	
27	12		3		360		46		107		181		
28	25		3		286	261	49	45	71	66	144	131	
29	14		1		335	335	58	58	95	92	155	158	
30	7		1										
31	5		2		309	315	53	54	86	80	146	160	
32	19		1										
33	37		3										
34	12		1		301	316	51	46	78	93	152	154	
35	2		1										
36	6		3		352	326	57	61	92	79	173	163	
37	22		1		361	358	56	56	100	100	181	178	
38	3		1		311	318	55	60	79	78	145	151	

MI at Special Day School

Child No	BRISTOL SOCIAL ADJUSTMENT GUIDE				SHOBEN'S PARENT-ATTITUDE SURVEY								
	Total Raw Score		Teachers' Assessment of child's popularity		Total Score including miscellaneous		Ignoring		Possessive		Dominant		
					MRS	MR	MRS	MR	MRS	MR	MRS	MR	
1	17		3										
2	2		1		319		53		87		157		
3	0		1										
4	0		1										
5	11		1		315	300	53	51	79	72	167	155	
6	42		3										
7	2		1		329	324	57	52	79	78	169	172	
8	7		1		343	305	62	57	85	78	167	145	
9	27		3		300	298	50	50	78	81	153	148	
10	6		1		342	364	53	55	91	105	166	174	
11	2		1		342	342	57	57	95	95	159	159	
12	1		1										
13	27		2										
14	3		1										
15	3		3		344	317	55	56	85	93	176	143	
16	3		1										
17	5		1		311	258	55	40	77	71	153	113	
18	5		1		320	335	60	56	88	95	154	160	
19	2		1		343		56		93		170		
20	2		1		338	310	53	63	85	79	175	144	
21	0		1		340		53		85		179		
22	30		2		301	293	54	55	84	75	139	136	
23	15		1										
24	16		1		288	280	54	49	69	76	145	137	
25	1		1		280	288	52	50	70	74	139	144	
26	0		1										
27	2		1		282		57		70		141		
28	13		1		338	316	56	53	83	77	172	160	
29	1		1										
30	4		1		364	342	61	50	90	86	187	180	
31	7		1										
32	18		1										
33	14		1		328	307	55	49	86	90	162	143	
34	25		3		356	369	55	55	95	101	182	186	
35	1		1		307		58		71		153		
36	2		1		367	352	55	51	114	93	170	181	
37	29		4		353	348	63	68	91	94	175	160	
38	18		3		305	291	55	56	78	77	149	140	

PH at Special Residential School

Child No	BRISTOL SOCIAL ADJUSTMENT GUIDE				SHOBEN'S PARENT-ATTITUDE SURVEY								
	Total Raw Score		Teachers' Assessment of child's popularity		Total Score including miscellaneous		Ignoring		Possessive		Dominant		
					MRS	MR	MRS	MR	MRS	MR	MRS	MR	
1	0		1		339		58		96		161		
2	7		1										
3	15		1		295	304	51	52	70	83	146	144	
4	0		1										
5	3		1		373	338	63	58	98	93	189	161	
6	16		3		346	357	59	60	91	99	172	173	
7	0		1		312	314	58	56	79	82	150	155	
8	0		1		312	326	49	50	82	85	152	161	
9	7		1										
10	2		1										
11	3		1										
12	18		1										
13	10		1										
14	1		1		385	384	64	63	91	87	203	207	
15	1		1		332	333	54	55	88	88	170	170	
16	9		3										
17	8		1										
18	8		1										
19	12		1		305	318	61	56	73	79	151	161	
20	1		1		371	381	65	70	102	97	181	187	
21	8		1										
22	5		1										
23	3		1		321	291	51	49	88	81	157	136	
24	19		3		316	350	49	64	82	105	162	152	
25	15		2										
26	4		1										
27	5		1		317	315	55	50	78	79	158	160	
28	16		2		351	311	64	54	89	81	169	155	
29	11		1		327	382	52	60	80	96	166	197	
30	4		1		376	308	58	61	103	74	191	149	
31	8		1										
32	12		1										
33	1		1										
34	11		1		314	292	54	46	75	77	156	146	
35	10		1										
36	2		1										
37	14		1										
38	1		1		322	320	57	59	88	75	152	167	

Controls for HI at Ordinary Day School

Child No	BRISTOL SOCIAL ADJUSTMENT GUIDE				SHOBEN'S PARENT-ATTITUDE SURVEY								
	Total Raw Score		Teachers' Assessment of child's popularity		Total Score including miscellaneous		Ignoring		Possessive		Dominant		
					MRS	MR	MRS	MR	MRS	MR	MRS	MR	
1	7		1										
2	4		1		319	353	49	55	78	92	161	161	
3	2		1										
4	0		1										
5	12		1										
6	2		1										
7	1		1										
8	19		3		339	315	52	52	88	84	167	158	
9	2		1										
10	20		2										
11	0		1		320	338	51	57	84	89	162	168	
12	2		1		313	333	59	59	77	89	150	160	
13	4		1										
14	4		1		296	296	56	57	69	74	144	141	
15	0		1		342	386	53	60	94	111	171	185	
16	2		1		322	321	56	55	94	91	153	150	
17	18		3										
18	1		1		335	325	57	52	85	87	166	162	
19	4		1										
20	2		1		361	358	60	58	100	88	179	185	
21	7		1		292	316	48	51	71	80	147	165	
22	0		1		322	323	49	58	83	86	161	152	
23	0		1		303	337	56	47	78	95	150	164	
24	1		1		371	302	62	57	98	75	182	142	
25	5		1		288	327	48	58	70	79	148	168	
26	11		3		300	297	50	62	84	72	144	142	
27	0		1										
28	4		1		310	298	52	50	81	76	149	147	
29	5		1										
30	6		1										
31	0		1		309	305	51	51	82	83	154	149	
32	5		1										
33	5		1										
34	0		1										
35	2		1		330	337	52	55	81	88	173	170	
36	3		1		347	317	65	61	86	83	170	150	
37	5		1		314	332	59	60	78	82	155	164	
38	2		1										

Controls for MI at Special Day School

Child No	BRISTOL SOCIAL ADJUSTMENT GUIDE				SHOBEN'S PARENT-ATTITUDE SURVEY								
	Total Raw Score		Teachers' Assessment of child's popularity		Total Score including miscellaneous		Ignoring		Possessive		Dominant		
					MRS	MR	MRS	MR	MRS	MR	MRS	MR	
1	2		1										
2	2		1		296	294	49	47	82	88	145	138	
3	8		1										
4	0		1		295	323	46	53	73	83	148	165	
5	11		3										
6	28		3		287		58		78		124		
7	14		3		382	393	64	66	101	105	193	198	
8	6		1										
9	3		1										
10	1		1										
11	4		1		321	287	49	50	92	76	152	132	
12	2		1		333	324	57	51	81	85	166	163	
13	4		2		368	345	55	57	104	88	180	176	
14	1		1		341		56		85		174		
15	0		1		345	345	51	56	85	101	181	184	
16	0		1		284	298	57	56	77	77	131	142	
17	0		1										
18	1		1		345	346	48	62	98	84	174	170	
19	3		1		318	286	54	51	81	68	159	145	
20	3		1										
21	6		1		325	324	52	57	87	87	158	152	
22	1		1		315	310	52	53	79	80	153	150	
23	0		1		315	323	51	54	78	84	157	158	
24	0		1		314	317	48	48	81	87	158	154	
25	32		4										
26	17		2		325	320	56	59	81	86	162	152	
27	0		1		328	301	65	57	78	71	166	147	
28	7		1										
29	7		1										
30	27		1										
31	1		1		339	361	54	54	89	97	172	186	
32	23		1										
33	18		3		322	313	55	55	78	71	170	164	
34	24		3										
35	17		3										
36	15		1		291	339	54	61	77	88	138	164	
37	4		1										
38	10		1										

Controls for Ph at Special Residential School

Child No	BRISTOL SOCIAL ADJUSTMENT GUIDE				SHOBEN'S PARENT-ATTITUDE SURVEY								
	Total Raw Score		Teachers' Assessment of Child's popularity		Total Score including miscellaneous		Ignoring		Possessive		Dominant		
					MRS	MR	MRS	MR	MRS	MR	MRS	MR	
1	6		1										
2	7		1										
3	14		1										
4	0		1										
5	7		1										
6	6		1										
7	0		1										
8	2		1										
9	19		1										
10	11		1										
11	12		1										
12	12		3										
13	0		1										
14	15		1										
15	0		1										
16	11		1										
17	3		1										
18	1		1										
19	0		1										
20	2		1										
21	10		1										
22	3		1										
23	7		1										
24	8		1										
25	3		1										
26	3		1										
27	6		1										
28	5		1										
29	4		1										
30	7		1										
31	0		1										
32	2		1										
33	1		3										
34	8		1										
35	1		1										
36	1		1										
37	28		3										
38	0		1										

PH at Ordinary
Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Outgoing Positive						Outgoing Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	1		8	6	2		8	1	1		8		
2	1		12	8	4		15				3		
3	6		1	4	1	4	2		1		14	1	
4		1	12	8	2			2	2	1	16		
5	1	1	2	2	3	1	9		1			3	
6	3	2	9	1	2	1	4	1	5	2		3	
7		2	2	1	7	3		1	3	1	3	4	
8		1	9	8	10	8	12				3	3	
9	7	3	1	5			12	1	4	1			
10	5		1	7	5		5	1	2	3		5	
11		2	5	2	4	5	5	2	2	2	4	2	
12	3	4	2	5	2		2	1	3	2	7		
13	7	1	2	8			4	4	6	4			
14	9		5	8	6	6	15	2					
15	9	1	7	6	5		11		3		4		
16	5		4	6	3				1	2	15		
17	2	3		3	2	2	2	4	4	1	1	4	
18	7	1	6	4							18		
19	1	2	3	6	6		13		3		2		
20	4	1	2	1	3		7	1	5	1	3		
21		1	5	4	9		5		5			9	
22	6	4	6	2			4	3	4	7			
23	4	4	1	7	1	1		1	5	2	10		
24	5	1	3	4	2	1		3			1	12	
25	11	3	1	2	1		1	1		1	15		
26	4	2	1	7	4		5		3	1	8		
27	5		9	4			12		4	2			
28	4	2	1	3	4	2	2	1	2	1	5	7	
29	1		5	9		2	4	1			2		
30		1	1	3	4	5	3		2	1	6	4	
31	2	6	5	6	1		5	1			11		
32	9		1	5	5		13		2		3		
33	8		4		1		13				1	4	
34	15		1	1		1	3		4	1	8		
35	6		4	3			5	2	1	2	2	6	
36	1		4	9	7		9	2	6	3			
37	1		5	6	1	5	3	3	4	2	3	3	
38	5	1	2	5	5		2		2	2	5	10	

MI At Special
Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Outgoing Positive						Outgoing Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	2	1	7	9	8		14	1	1	1			
2	1	2	8	9	9		15		1	1	1		
3	3	1	4	1		1	1	1	6	1	4	5	
4	6	2	5	3	1		2		4	3	9		
5	1	1		2	14		1				17		
6	2	4	2	4	6		7	2	3	1	5		
7	14		2	1	1		14				4		
8	1	4	7	13	10		10	5	3	1	3		
9	4	3		11			13				5		
10	7	2	1	1	6	1	14			1		3	
11	6		2	5	3	2	6	1	3		3	5	
12	2	1	1	9		5			15		1		
13	1	3	1	6	3		14	2			1		
14		1	6	6	2	2	9		2		5	2	
15	3	3	2	6	10		18						
16	5		4	6	3		5		5	1	1	6	
17			9	9			1		5		12		
18	7	3	3	1	4		16				2		
19		1		5	6							4	
20	1	2	3	2	3	1	6	1		1	2	2	
21	3			11	4		9	1		2	6		
22	3	3	6	9			10	4	4	1			
23			5	4	4	5	7	3	3	1	3	1	
24	8	3		6	2		8		4	3	3		
25	6	2	4	3	1		2				3	1	
26	12	2		3			14	3	1				
27	7		2	4	5		18						
28		3	1	3	4	7			1		8	9	
29	2	2	3	10	2	3	5		3		6	2	
30	2	3	6	5	2		3				14		
31		2	4	9	2	2	3	1	2	2	6	4	
32	3	3	1			10	8				7	2	
33			13	12			17	1					
34	7		6	8			11		2	5			
35	5			12	1			2			11		
36			2	3	4	6	2				4	8	
37	6	4	2	1	4	2	1	1	2		3	11	
38	3	2	6	7	2		11			6	1		

PH at Special Residential School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Outgoing Positive						Outgoing Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	2	1	6	10	1	1	6	1	1		3	7	
2	10	1	1	3	2		8	1	7		1		
3	3		2	2	7	5	7	2	2	3	2	3	
4	2	2	3	1			4		8	3			
5		1	2	10	3	2	2	2	2		9	3	
6	1	1	7	15			12	1	5				
7	4		2	1	4	7	9	1		2	6		
8	2			12	2		11			1			
9	3	1	3		11		8	1		6	2		
10	1	2	3	2		2	11				3	1	
11	1	1	8	3	8	3	5			8	1	1	
12	1	1	1	4	2	1	3	1	2	3	5	2	
13			5	5	5	3	14				2		
14	3	1	10	12	11	9	8		1	1	1		
15	5	1	7	8			8	5	3	2			
16	3	1	5	3	8	3	13						
17	1	3	1	4	1		9			1		6	
18	7	2	6	4			13	1	1	3			
19		5		10	1	2	1		4		7	6	
20	6		3	1	2	4	7		1	3			
21		1	5	3	1	8	10	3			5		
22	1	1	2	2	12		11				7		
23	1		9	8			18						
24	6	1	6	6	7		11	4	4	1			
25	4	4	8	7	12		15	1	3	2	2		
26	2	2	5	10	11		12		3	1	2		
27	9		4	1	4		7	2	2	1	6		
28	7	4	4	3			10	5	1	3			
29	11		1	4	2		9				5	1	
30			7	10			6		5	7			
31	3	2	2		3	7	8		3		5		
32	2	3	11				13	1	2				
33		2	1	3	11	1	4		4	2	4	3	
34	6		10	6			5			1	9	3	
35	3	5	8	8	8	12	17				1		
36	2	1	6	5	12		4			1	11		
37	5	1		2	9	1	4	2		3	1	3	
38		1	1	2	8	6	2	1	3		4	8	

Controls for
HI at Ordinary
Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Outgoing Positive						Outgoing Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	4			6	8		2	2	9		5		
2	8		8	7			16		2	2			
3	5	6	3	3	3	2	10	1		1	3	3	
4	8		3	4	3		2		3	2	11		
5			1	4		6	1	1	2		1		
6	1	1	5	4	6		5		4		1	7	
7		1	3	4	3	7	4	1	3	1	1	8	
8	2		9	2	3			1	3	1	13		
9	1		8	3	3	3	13			2		3	
10	4	4	1	2			4		1		3	5	
11	2		1	9	6				3	1	11	2	
12	6		4	1	2		1		2	2	2	7	
13	12			1		5	3	1			6	1	
14	6		7	5	8	4	15		2			1	
15	8	1	7	7			12	3	1	2			
16	3		5	5	5	6	3		5	5	5	6	
17	1	6	5	2		2	1	6	1		1		
18	5		7	3	3		9		1	3	5		
19	1	1	10	8	5		8			3	7		
20	4		5	1	1	8	6			1	9	2	
21	8	1	1	2	1	5			2		8	8	
22	6		4	7	1		2	1	3	1	11		
23	5	3	4	6	4	1	6	3			7	2	
24	10			3	5		8	4			6		
25	4	1	1	11	1				5	1	12		
26	10	1	5	2				1	1	1	15		
27	8	1	4	5	4		1				17		
28	7		2	8	3	1	1	4	3	1	1	10	
29	1		6	5	6		3		2	2	11		
30	7	1	2	4	1		4		2		2	7	
31	3	2	7	2	7		10		1		7		
32	2		1	9	1	1	7		1		2		
33	10	1	1	2		1	1	3			2		
34	3		2	4		9		1	3		14		
35	6		1	5	2	4	9		4	1			
36	13	2			2	1	3	3	2	2	3	5	
37	7		3	4	1	3	3		5	2	7	1	
38	10	1	2	4	1		6	1	1		5	7	

Controls for
MR at Special
Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Outgoing Positive						Outgoing Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	1	1	10	9	8		6				12		
2	11		2	4	1		6				12		
3	1	1	3	1	4	2	14		1		1		
4	3	2	4	6		3	9		4		5		
5	14		1	3			15			3			
6	6	1	1	5	5				9		10		
7	8	1		2	3	4	1		1	1	11	4	
8	3		1	3	1	3	1		1		1	1	
9	6	1	6	3	1	1	5	2	1			10	
10	3	2	1	1	1	?	1		4	2	9	2	
11	9		9	7	2	2	13				4	1	
12	1		3	4		2	6	1	1		5	3	
13	1		5	3	4	5	6	6	1	2		3	
14	2	2	9	13	5		4	1		1	12		
15			5	10	1	2	1		1	1	14	1	
16	3	2	10	11	4	6	11	2			4	4	
17	4		6	4	4		4		2	1	11		
18		5	8	5					5	2	11		
19	1	2	1	3		11	5				9	4	
20	6	2	2	5		3	3		1	1	9	4	
21	5	2	7	4			2	1	2		13		
22	1	1	3	11	2		5	1	2	1	9		
23	3		6	9	2		4	5			9		
24	3		11	5	1		2	7		1	8		
25	13	1		1	1	2	9	2	1	2	4		
26	6		4	6	7		6	1	3	2	9		
27	9	9			1		2		1		15		
28	1	3	10	12			15	3					
29	12					6		2	1	2	13		
30	1	1		2	4	2	2		2		1	13	
31	9		4	5	2		11	1			4	1	
32	2	1	8	2		3	3		1		8	4	
33	6		2	9			13	1	4				
34		1	5	11		1	1		6	1	2	8	
35	11			4	1	2	1	1		1	14	2	
36	6		7	3			5	1			2	10	
37	11	1		1	3	2	16					2	
38	5		4	5	5	1	4	1			1	3	

Controls for
MI at Special
Residential School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Outgoing Positive						Outgoing Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	5		7	6	2	2	12				6		
2	3	1	2	8		4	2			3	6	7	
3	6		1	3	2	3	5				3	1	
4	3			7			12	3	2		2		
5	5	2	6	5			7	2			3	6	
6	7	2	9	6	7		13				5		
7	8		5	4	1		2			1	4	11	
8	1		10	4	3		3		1	3	11		
9	2		9	11	6		10	4		1	3		
10	1		11	10			7				11		
11	11	2		4		1	11				2	5	
12	6	1	4	3		3	5			1	12		
13	2	2	16	14			15		1	3			
14	2		6	9	5	6	7	4		3	1	3	
15	2		6	9	1		3		1		14		
16	3		8	5	2		11	3		2	2		
17	4		7	3	3	1	4				4	10	
18	11		4	2	1	1	17				1		
19	4		4	5	3	2	14		1			3	
20	3		4	8	3		2		3	3	10		
21	6		5	5	2		17				1		
22	4		11	10			15	1	1	1			
23	13		1	1	2	1	18						
24	2		2	1	2	11	8	2		1	6	1	
25	4		4	6	4		16			1	1		
26	9			4	1	4	12	1			5		
27	5		2	7	4		18						
28	9			3	1	5	8				10		
29	1		5	12	1		1	1	2	1	13		
30	4	5		10			10	3		5			
31	2		8	4	1	3	16	1				1	
32	6			7	5		10	5		1	2		
33	4	2		3	9		2		5	1	10		
34	8	1	1	6		1	1	2	4	5	7		
35	5		1	1	2	1	6	3				1	
36	5	3	1	2	7		8		1	4	5		
37	9	1	2	6	3		3				15		
38	8	2	2	4	2	2	2				16		

HI at Ordinary Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Incoming Positive						Incoming Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	2		5	1	6		6		3	2	4		
2	1		7	9	6		14		2	2			
3	7		2	5	1	1	4		4		8		
4		1	9	9	3				3	1	13		
5	1		3	3	3		4		2		2	2	
6	3		8	5			3		4	3	2	4	
7		3	2	4	5	1		2	1	5	3	2	
8	1		7	8	12	10	7			1	2	5	
9	3		6	7			12		1	2			
10	2			5	7	1	6		5	2	1	2	
11	1	1	3	6	3	2	4	2	2	1	6	1	
12	7	1	4	1	2		2		4	2	7		
13	4		3	9			9		6				
14	7		8	9	7	7	14			1			
15	8		8	4	4		11		2		3		
16	3		6	6	2		2		1	4	9		
17			2	3	2	2	1		4	1	2	2	
18	5		4	7			2		1	1	12		
19	4		1	6	5		9		1	1	5		
20	2		2	2	2		6		5		3		
21	2			3	11		1		4	1	2	8	
22	2	2	4	8			10	1	2				
23	5			3	1	7	1		8	2	7	1	
24	3		2	6			3				2	9	
25	9		3	4			1		2	3	10		
26	3		1	10	2		6		6		3		
27	5		5	6			9		6				
28	5	1	1	7	1	1	1	2	2	2	2	7	
29			4	7		5	3			2	2		
30			2	1	5	5			4	2	3	3	
31	2	1	3	5	5		3		1	1	10		
32	5		6	8	5		12		2	1	1		
33	3		4	1	1		14			1		1	
34	13		3				5			3	1	6	
35	4		2	2		2	8		6			1	
36	1		10	7	5		6		6	6	1		
37	3		1	7	1	4			6	5	3	2	
38	4		6	4	2	1	3		1	3	6	6	

PH at Special
Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Incoming Positive						Incoming Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	4		5	9	5		10		3	6	1		
2	2		6	8	9		14			2			
3	2		4	5			5		4	2	2	2	
4	7		7	1	1		1		2	3	9		
5	1			3	12				2	2	12		
6	4	1	2	3	6		6			4	6		
7	10		5	6	1		14		1		1		
8			9	14	11		11		4	4	1		
9	3			13			15				1		
10	7	1		3	5		13		1	1		1	
11	1	1	4	4	2	4	7		4	2		3	
12		2		15		1			14		1	1	
13	1	1	4	2	3		8		2		1	5	
14			5	13		3	10		2		4		
15	5		1	2	8		13		2				
16	7		2	2	5		8		3		1	4	
17	1		2	13			1		1	2	12		
18	8		2	5	1		15				1		
19				6	6					1		6	
20	1		1	4	2	2	1		1	1	1	1	
21	3			11	2		7			3	7		
22	3		13	10			10		4	2			
23	1		5	9	4	6	9		1	2	3	2	
24	5		2	10	3		8		3		5		
25	5		3	4			3		1	1		1	
26	7		4	7			10		2	4			
27	6		5	2	7		16						
28				7	4	5			1	1	10	4	
29			1	6	2	2	8		2		5	1	
30	4		7	4	1		2		3	2	11		
31			3	6	1	8	5		1	5	3	1	
32	2		2		2	10	4		1		7	4	
33			12	12			15		1	1			
34	6		4	7			12		3	1			
35	3			12	1		4				6		
36			2	3	3	1					10	4	
37	4		1	4	3	4	3		3		3	7	
38	1		10	7	3		12			3	1		

MH at Special Residential School

BENE-ANTHONY FAMILY RELATIONS

Child No	Incoming Positive						Incoming Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1			7	8	1	3	5				6	5	
2	8		3	5			8		7	1			
3	2		1	3	5	1	10		1	4	1		
4	2	2	2	2			4	2	6	3			
5			2	12		2	3		2		6	5	
6			7	16			15			1			
7	1		2	3	6	8	9		1	1	3	2	
8	2			14			8				1	3	
9			3	2	11		11		4				
10	1		1	4	3	2	11				3	1	
11			7	7	8	1	5		2	3	4	4	
12	2		4	6	1		2		2	6	2	5	
13			6	6	3	3	9		3	1	1		
14	1		12	13	11	10	9		1	1	1	2	
15	4		9	8			10		4	2			
16	1		7	4	5	2	10		2				
17			1	3	5		9					7	
18	5		6	7			10		1	5			
19				8	3	5	3		1		7	5	
20	2		4	1	2	6	9		2		1		
21	1		2	7	1	6	4		2	2	7	1	
22				3	13		11				5		
23			9	7			16						
24	1		7	9	7		12		3	2	1		
25	3		9	11	11		13		2	2	3		
26	1		8	10	9		12		3	2	2		
27	5	1	4	3	3		7		1	3	5		
28	4		6	8			10		4	2			
29	12		1	2	2		15		1				
30	1		7	8			3		11	2			
31	9		2		4		8		5	2	3		
32		1	8				12		3				
33	1		2	5	7	1	4		2		10		
34	8		7	3		1	8		1	1	3	3	
35	4		8	10	7	7	12		2	2	2		
36	1		7	9	8		3		3	2	11		
37	4			4	8		7			2	4	3	
38			3	4	2	7			4	3	6	3	

Controls for MI at Ordinary Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Incoming Positive						Incoming Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	1	3		2	10		2		8	1	5		
2	9		6	7			12		4	2			
3	1		4	4	3	4	10		2	4			
4	9		1	6			1		3	2	10		
5	1		1	1		6	1		1	1	1	2	
6	3		1	5	1		1				4	9	
7				10		6	1	2	3	1	3	6	
8	2		6	7			2		5	1	8		
9	1		5	4	5	1	14		1	1			
10	7	2	1		1		3	2	1		2	7	
11	4		1	4	1	6	3		7		6		
12	4		3	3			5		5	3		3	
13	9		2	2		2	6				8		
14	4		4	4	5	11	12		2		1	1	
15	8		3	7			10		3	4			
16	6		5	5	7		10		3	3	3		
17	1	1	4	2	2	1	1		2	3	3	2	
18	2	2	8	3	1		9		3	3	1		
19	5		6	8	1		12			2	2		
20	6		3	3	2	3	5		2	2	4	3	
21	9			1	3	4	6		1		6	3	
22	8		2	6			5		2	1	7		
23	4		6	6	3	2	5		4	1	4	3	
24	8		1	3	6		12				4		
25	2			9	5		8		5	1	1		
26	3		7	4	2		8		1		7		
27	4		5	5	7		2			1	13		
28	5		4	8	5	3	4		5	3	4	4	
29	1		8	1	6		1			5	10		
30	6		3	5	1		11		2		1	1	
31	8	1	3		4		10		1		5		
32	3			9			8		3		2	1	
33	7		1	3			4		2	1		5	
34	2		1	6	3	5	4	1	2	1	7	1	
35	4			9	1		11		3				
36	10		5			1	8		3	4		1	
37	6		5	4			3		3	2	5	1	
38	8		2	6			9		2	2	3	1	

Controls for MI at
Special Day School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Incoming Positive						Incoming Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	2		10	9	4		7				9		
2	10		2	4			6		1		9		
3	3		3	5	2	1	12			1	2		
4			5	5	5		8		3	2	2	1	
5	14		1	1			8		2	5			
6	6		1	7	4		1		5	3	6		
7	7		1	1	1	6	6		3	1	3	3	
8	4			3		2	4				3	4	
9	3	1	4	5	3		5					11	
10	2			1	1	5	3		4	6	3		
11	8		6	7	5	4	13			1	1	2	
12	3		3	3		2	7		1		5	2	
13	2	1	4	5		3	4	2	4	2		5	
14	1		12	11	6		9		1	1	7		
15	1		5	6	1	3	5		1	2	7		
16	6		7	6	4	3	11		2		1	2	
17	8		4	1	3		7		2	1	6		
18			6	8	1				4	2	10		
19	1		5	3		7	1		8	1	3	3	
20	6		2	6	1	1	5		2	3	4	1	
21	4		6	8	2		6		2	4	4		
22	1		1	13	1		10		3		3		
23	3		7	8	4		6		3	1	6		
24	5		9	6	2		3		1	5	7		
25	13		2	1			11		2	1	1	1	
26	7		6	6	2		8		3		4		
27	7		7	1	1		2		1	1	12		
28	1		12	12			12		4	1			
29	8			2		5	3		1	4	5	1	
30	3			5	2	3			2	1	2	11	
31	8		6	7		1	13		1		2		
32	4		5	2	1	2	7			2	4	1	
33	5		1	10			11		4				
34		1	3	11		1			10		1	5	
35	7			9			4				12		
36	4		5	2	1		5		1	2		7	
37	7			5	1		12		2	1		1	
38	6		4	6	3		4		2	2	1	2	

Controls for MI at
Special Residential School

BENE-ANTHONY FAMILY RELATIONS TEST

Child No	Incoming Positive						Incoming Negative						
	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	Nobody	Self	Father	Mother	Sibling 1	Sibling 2	
1	6		3	3	1	7	12		1	2	1		
2	1		7	2	1	7	7		2	4	2	1	
3	3			2	1		8	1	1	1		1	
4	4		1	9			12		2		2		
5	11		2	2		1	12				2	2	
6	4		11	10	9		13		2	2	1		
7	9		3	3	1		4				11	1	
8			5	3	7		6		2	5	3		
9			4	14	2		13		1	1	1		
10	1		7	7	2		7		1		8		
11	7		1	3		5	11		1		1	3	
12	4		4	5		3	10		2		3	1	
13	3		12	13			12		3	3			
14	5		6	6	2	4	10			2	2	2	
15			3	12	1		8		2	1	5		
16	4		6	5	1		9			2	4		
17	5		4	3	2	1	5		2	1	2	5	
18	7		6	2	1		15			1			
19	3		1	5	5	2	11		3	1	1		
20	2		4	9	1		8		3	2	3		
21	5		5	4	1		13		1	1	1		
22	2		11	12			12		4	2			
23	9		3	1		3	16						
24			2	2	2	10	7		4		5		
25	3		4	7	2		14				2		
26	6			5	2	3	13			1	2		
27	4		2	8	2		14		2				
28	6			1	2	7	10			1	5		
29	3		4	9			3		5		8		
30	4	1		11			11	1		4			
31	1		7	5	2	1	13		2		1		
32				12	4		11			3	2		
33	3		4	4		5	6		2	3	4	1	
34	8		2	2	4		8		4	2	3		
35	5		4	5			7				3	2	
36	8		2	4	2		5		4	1	6		
37	7		2	5	3		7			2	7		
38	4		6	8	2	4	10			1	5		

ADDENDA AND CORRIGENDA

Dahl, G.A. (1971) New thinking in school design. Dissertation for Higher Diploma in Education, Dublin University.